

**THE  
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation  
INCORPORATING

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## TO CALLERS AND TELEPHONERS

Until further notice our office hours are: Mondays to Fridays 9.30 a.m. till 5.30 p.m.  
The office is closed on Saturdays

## ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

## ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

## Railway Nationalisation and Compensation

AS we indicated in our last week's issue, there is a school of thought which considers it likely that when the Government brings forward its detailed plans for the nationalisation of transport, it may be found that the scheme envisages the maintenance of the present broad groups of transport undertakings. That is to say, the four main-line railways may remain much as they are, with the holders of stock in each case bought out. The long-distance road haulage industry may be treated similarly, and likewise the canals. From an administrative and operating viewpoint, a plan of this kind might have much to commend it, but as an alternative to the scheme which was envisaged earlier of an over-all transport board, it might involve various complications in the matter of financial stability in the future. If, for example, the railways for practical purposes formed one State corporation, long-distance road haulage another, and canals yet a third, it is reasonable to assume that endeavours would be made to ensure that each was on a self-supporting basis. That is to say, that at the very least each of the corporations would be able to earn the interest due on its stocks, if not to provide some balance for the Exchequer. So far as the railway corporation would be concerned, the inference would be fairly obvious. With their present inflated costs, and the existing restricted level of charges, it is very unlikely that on any reasonable basis of compensation, the railways could pay their way. Either charges would have to be increased substantially, or the taxpayer would have to contribute towards the cost of the service of the compensation stock.

## Public and Private Compensation

If, on the other hand, road and rail were governed by a transport board which was responsible for the service of the overall compensation stock, the loading of the railways to a degree sufficient to carry present charges might be achieved by the forcible diversion of traffic from road to rail, but this would have its reaction on the service of the stock issued to compensate owners of road haulage businesses. We referred in our November 30 issue to some of the difficulties which might arise in the fixing of nationalised railway passenger fares in competition with competing bus services or railway freight charges for coal, in competition with coastwise shipping services still in the hands of private enterprise. If it were decided to run railways as one group, the long-distance road haulage industry as another group, and civil aviation as yet another, the possibility can be seen not only of competition between State-owned enterprise and private enterprises which afford similar transport services, but also between two groups of State enterprise, for in the circumstances we have envisaged, both the socialised railways and the socialised long-distance road haulage corporations might well be expected by the Exchequer to pay their way. A somewhat similar position would arise in the event of the Government bringing under public boards the gas industry and the electric supply industry. The most probable outcome of all these projects would be loss of freedom of choice by the consumer, for only by this means could anything approaching reasonable stability for these public corporations be achieved.

## Suggestions for Re-Organising East Africa Transport

During the war an inter-territorial organisation was established in East Africa to co-ordinate and direct the joint war effort of Kenya, Uganda, and Tanganyika. This involved the pooling of resources, including the common use of transport, shipping, and supplies. Proposals for the future of the organisation have now been put forward in a White Paper ("Inter-Territorial Organisation in East Africa"). At present the inter-territorial services are directed by the Conference of East African Governors, but the White Paper points out certain defects in its present organisation, among which is the fact that the conference functions without public debate or discussion, and that its decisions are based on material available only to the governments concerned and not to the general public. A scheme is put forward for an East African High Commission, consisting of the Governors of Kenya, Uganda, and Tanganyika; and the creation of a Legislative Assembly empowered to enact ordinances effective throughout the three territories, all of which would require approval by the High Commission before publication. The departmental reorganisation involved would include complete amalgamation of the Kenya & Uganda Railways & Harbours Administration with the Tanganyika Government Railways & Port Services. In addition to existing inter-territorial advisory bodies that would be retained, it is suggested that three new ones should be set up, including an East African Railway, Road, & Marine Services Advisory Board. The possibility of linking

\* Colonial No. 191. Stationery Office, price 2d.

or even merging the administrations of Kenya & Uganda Railways and the Tanganyika Government Railways was envisaged in our July 6 issue.

### Trans-Zambesia Railway

The accounts of the Trans-Zambesia Railway Co. Ltd. for year ended December 31, 1944 show the gross revenue to have been £257,837, an increase of £34,866 or 14 per cent. over 1943. Net revenue came out at £98,453, an increase of £13,252 or 13 per cent. over 1943. In accordance with the arrangements (referred to in our March 30, 1945, issue) made last year by the company with the Colonial Office on behalf of the Nyasaland Government, for the re-organisation of the company's finances, to which the Portuguese Government agreed, the company received during the year advances from the Nyasaland Government amounting to £773,000, which enabled the company to pay off, on April 30, 1945, the 6 per cent. debentures held by the public then outstanding, and on August 1, 1945, the £200,000 3½ per cent. notes. In exchange for these advances and for the £187,000 6 per cent. debentures held by the Nyasaland Government, the company undertook to issue to the Nyasaland Government £960,000 of new 3½ per cent. first debenture stock to be created. In accordance with the arrangement, the company will also issue to the Nyasaland Government £1,500,000 of new 5 per cent. income debenture stock in settlement of the debt of £1,536,144 which, with interest, amounts to £2,565,597, the balance being written off.

### A Spate of American Coach-Building

Now that the embargo on passenger coach building in the United States has been lifted, the companies which specialise in coach construction are taking substantial steps to overtake the unprecedented accumulation of orders on their books. The Pullman-Standard Car Manufacturing Company, for example, estimates its present total of outstanding orders for railway equipment at \$78,000,000. To cope with the programme, the company has purchased from the Navy Department the huge ship assembly building which was erected on the Pullman coach-manufacturing plant at Chicago to build vessels for the Navy. The structure, which has an area of 170,000 sq. ft., is to be more than doubled in size, and provided with a covered section of 40,000 sq. ft. for the storage of steel; when complete, this is expected to be the largest coach-building plant in the world. The Edward G. Budd Manufacturing Company, which plans to spend \$16,000,000 on the development of its many manufacturing interests, is laying out \$1,750,000 on the conversion and equipment of its leased Red Lion plant, with a view to turning out from two to four stainless steel coaches daily, and has already begun coach construction without waiting for completion of the scheme.

### Overseas Railway Traffics

Despite the improvement in traffics last year, the progressive increases in receipts for the first 22 weeks of the current year and the somewhat better outlook for the Argentine railways envisaged by the Chairmen of the companies at the annual meetings recently, the debenture stocks and shares have so far been unresponsive, quotations for all classes of capital having remained inactive for many months. The results for the year of the smaller South American railways have also improved but the increased costs of operation and higher wages and fuel bills tend to equate any advantage accruing from increased business. The Brazilian and Uruguayan railways also continue to record large increases in traffics. The receipts of the Canadian Pacific Railways continue to decline.

	No. of week	Weekly traffics £	Inc. or dec. £	Aggregate traffic £	Inc. or dec. £
Buenos Ayres & Pacific*	22	148,750	+10,625	2,816,875	+ 94,625
Buenos Ayres Great Southern*	22	218,812	+41,875	4,227,437	+ 321,000
Buenos Ayres Western*	22	78,625	+ 6,562	1,580,625	+ 73,000
Central Argentine*	22	193,219	+22,900	4,160,644	+ 298,415
Entre Rios*	22	24,912	+ 3,437	578,531	+ 64,881

\* Pesos converted at 16 to £

### 4,000,000 b.h.p. of Diesel Power on U.S. Railways

Statistics of the diesel-electric motive power position in the United States, published recently, show that by June 30, 1945, the total number of diesel locomotives in service on all the railways, and in the yards of terminal and switching companies, had risen to 3,202, or to 3,934 individual units, with an aggregate b.h.p. of 4,059,290. On the Class 1 railways, diesel shunting power was well in the lead, with 2,159 locomotives averaging 800 b.h.p., and totalling 1,728,580 b.h.p. After this came the long-distance freight diesels, which in

the four years since their introduction have caught up and passed the diesel power used for passenger and mixed traffic service; road freight locomotives totalled 255 (940 units), of 1,266,200 b.h.p., as compared with 377 (424 units) passenger and mixed traffic locomotives of 777,850 b.h.p. But it is interesting to note that in 1945, for the first time, the combined long-distance freight and passenger power, 2,044,050 b.h.p., has gone ahead of the 1,728,580 b.h.p. total of shunting power. On the Class 1 railways the total number of diesel-electric locomotives at work on June 30, 1945, was 2,791 (3,523 units), with an aggregate b.h.p. of 3,772,630. For long-distance freight service the quadruple-unit 5,400 b.h.p. diesels are still the most popular, and totalled 216, of which 25 entered service during the first six months of 1945, with five triple-units of 4,050 b.h.p., and 21 twins of 2,700 b.h.p. In the passenger and mixed traffic realm, single 2,000 b.h.p. units are preferred, worked in multiple units of 4,000 and 6,000 b.h.p. when required; these were increased by 81, and there were 139 new shutters put into service.

### Subsidiary Signals

Although they have come to be designated "subsidiary," signals of the "calling on" type play a very important part in the working of traffic and deserve as much attention as the running signals. In fact, the problems associated with their use are much more difficult to resolve, so greatly do the circumstances of individual layouts affect the way in which the subsidiaries should be applied. In the discussion of a paper on subsidiary signals read to the Institution of Railway Signal Engineers by Mr. F. B. Egginton (reported on another page), the correct approach to the problem was held to be that a subsidiary signal should tell a driver plainly whether there is or is not an obstruction at the moment in the section of line it covers. We do not think there is much force in the objection raised that conditions may alter after a driver has been told there is an obstruction, and that this tends to destroy confidence in the signal. Conditions can—and frequently do—change after a restrictive running indication has been observed, but to a competent driver this does not in any way lessen the value and meaning of a cautionary indication when he sights it. It has also to be remembered that if conditions can alter for the better they may unexpectedly do so for the worse, both circumstances being an unavoidable accompaniment of our existing systems of signalling which nothing short of continuous cab indications could change. We do not agree that a single type of subsidiary should be adopted on the grounds that drivers make little or nothing of the differences between the existing ones. It is for the traffic officers to say what information they wish to impart, and for the locomotive running staff to consider the drivers' point of view.

### The Oldest L.N.E.R. Pacific Rebuilt

It is twenty-three years since the *Great Northern*, the late Sir Nigel Gresley's first Pacific locomotive, emerged from the shops at Doncaster to introduce to the world one of the most famous and successful classes of express engines ever built. As the years went by the dimensions of the earlier engines of this class were eclipsed in the later batches, as a result of certain wise modifications in valve gear, boiler pressure, super-heating surface, and so on, until the ultimate form of the Gresley Pacific was reached in the streamline Coronation engines. Nevertheless, the pioneer engine of the class, appearing while the old Great Northern Railway was still a separate company, was an historic locomotive, and one cannot avoid a passing feeling of regret that it has been altered almost beyond recognition in the rebuilding carried out by Mr. Thompson. However, the reconstructed engine is now considerably longer, heavier, and more powerful than its original, and may well be capable of great things which should add further lustre to the enviable record of performances of the L.N.E.R. Pacifics. The rebuilt locomotive is experimentally painted royal blue colour with red lining, and the outcome of this experiment will be watched for with interest by locomotive enthusiasts. This is a most welcome idea, which we hope will eventually be adopted as the standard L.N.E.R. livery. It has much to commend it, for it is a timely and commonsense breakaway from the green paint which, although varying in shade, formerly was applied to locomotives on three out of the four main-line railways, and it is a more dignified tone than the hard and rather flashy "Garter blue" applied to the "Coronation" engines. The experiment forms an historical link with one of the constituent companies forming the L.N.E.R., namely, the former Great Eastern Railway, which adopted that colour scheme as the standard livery for its locomotives.

## A Landmark in British Locomotive Design

IT seems to be the enviable fate of new classes of 4-6-2 locomotives in this country to be selected for the incorporation of everything that the Chief Mechanical Engineer can persuade his directors to adopt in progressive ideas and developments. Thus *The Great Bear*, for 1908 at any rate, was a veritable landmark in locomotive construction, even though not so significant as was then supposed. Much more, however, was the first Gresley Pacific a landmark—and it would be equally true to consider Sir William Stanier's "Princess Royal" class as a definite stepping-stone in locomotive engineering achievement. But none of these three earlier Pacifics could possibly equal Mr. Bulleid's "Merchant Navy" locomotives on the Southern Railway for wealth and profusion of technical ingenuity and constructional innovations. Although it is now over four years since the pioneer Bulleid Pacific went into service, only the most superficial details of their design and assembly methods have been released. Now the ban is lifted, and Mr. Bulleid has revealed to an intensely curious and interested following, many of the intriguing mysteries which were attached to these engines.

Mr. Bulleid is a Vice-President of the Institution of Mechanical Engineers, so it was perhaps natural that he should have decided to present this fascinating account of his work in a paper before that body. The paper, which we are publishing in abridged form in this and subsequent issues, traces the growth of the locomotive from a mere handful of data to the finished machine. From the outset we are made to realise the tremendous difficulties imposed by civil engineering restrictions on the design of a large modern locomotive. Right from the beginning it was a battle to cut down weight; and indeed the effect of these limitations is paradoxical, for instead of resulting (as might be expected) in a poorly-powered machine, they provided the stimulus to repeated exertions in reducing (for example) the boiler weight by new methods. The very high pressure of 280 lb. per sq. in.—unsurpassed, as yet, in this country—enabled sizes and weights to be reduced in many parts, including the cylinders and pistons. The weight saved by the new methods of firebox construction and the adoption of steel plates throughout was also considerable. In the moving parts of the engine, too, much revolving metal was eliminated by the suppression of all reciprocating balance, with the added advantage of removing hammer blow.

Great interest attaches to the use of Nicholson thermic syphons, and it is satisfactory to learn that most of the troubles that might have been feared either did not occur or were successfully overcome. Credit is also due to the works staff at Eastleigh for the way in which they acquired the highly specialised art of making these syphons and of checking the finished product by routine X-ray examination.

Of the designing of new valve gears there is no end, but the novelty of the Bulleid variety lies not so much in the derivation of actual valve motion (as it is virtually a special form of Walschaerts' gear) as in the use of a chain-driven three-throw crankshaft. This introduces a new principle in the disposition of valve gears, enabling them to be lifted away from the massive driving axle and suitably reduced in size and weight. Totally enclosed motion is not altogether new; and obviously has the great disadvantage of inaccessibility which was so conspicuously absent on Mr. Bulleid's austerity 0-6-0s. Nevertheless, the aim—a motion which will need no attention between general repairs—is most laudable, and probably could not be achieved without totally enclosing and continuously lubricating the parts concerned.

Numerous points of design of these engines have extremely attractive features which should make them favourites with the drivers and the operating staff. The admirable cab layout, the smoke-lifting device, the design of tender, the self-cleaning ash hoppers, and the electric lighting system, are all excellent; and we hope the day is not far distant when such accessories will be regarded as essentials, and not merely as luxuries for the favoured few among the locomotive stock.

One point which appeals to us strongly, and which, we would submit, might well be considered by locomotive engineers generally, was Mr. Bulleid's direct approach to specialists in connection with various design problems. Equally gratifying is his frank acknowledgement of their help. Steelmakers and private locomotive builders contributed to the layout and construction of firebox, syphons, wheel centres, and so on; Dr. Guy (Secretary of the Institution of Mechanical Engineers) offered suggestions for curing piston valve troubles; and Wing

Commander Cave-Browne-Cave, at Southampton University, helped with the wind tunnel tests for determining the best shape of the smoke-lifting front end.

## Through the Backbone of England

THE enormous progress of the railway network one hundred years ago was such that most of the centenaries falling at the present time are of little more than local interest, and the Southern Railway wisely has adopted the policy of celebrating its own centenaries as local civic events. An exception is provided by a centenary which falls today in connection with a constituent of the L.N.E.R., for the line in question was a vital link in the railway system of the country; it pierced the backbone of England (the Pennines); and it proved to be the origin of the Great Central Railway. The railway which today is celebrating its centenary of completion by a luncheon at the Royal Victoria Station Hotel, Sheffield (at which the guests will see a collection of historical relics), and by a small public exhibition of post-war rolling stock at Sheffield Victoria Station, is the Sheffield, Ashton-under-Lyne & Manchester Railway, which built the first railway between Manchester and Sheffield. A scheme linking these termini, by a different route, was projected in the autumn of 1830, and George Stephenson's services were secured as Engineer. The Sheffield & Manchester Railway secured its Act of Incorporation on August 23, 1831, but failed to raise the necessary capital, and thus the way was left open for an influential group headed by Lord Wharcliffe to establish the Sheffield, Ashton-under-Lyne & Manchester Railway with Charles Vignoles as Engineer, on May 5, 1837.

The principal work was the tunnel through the Pennines near Standedge, which became the famous Woodhead Tunnel. Although formal breaking of the ground took place on October 1, 1838, it was not until September of the next year that a serious start was made on the tunnel itself. This tunnel,\* which is 3 miles 22 yd. long, according to a recent re-measurement, was the longest in the country when it was opened and even today is the longest on the L.N.E.R. The original design was for a tunnel to accommodate two tracks, but it was decided to economise by constructing a single-line tunnel. At the outset it was necessary to make more than 4 miles of cart roads across the moors for the conveyance of coal and materials from the public roads. The tunnel was built on an inclination of 1 in 201 rising in an easterly direction. Construction was accomplished by working from each end and by means of five vertical shafts. The period of construction lasted over six years and the number of men employed fluctuated considerably; at one time it was said to be as great as 1,500. The quantity of excavation was 272,685 cu. yd., about half of which was drawn up the shafts.

The formal opening of the Woodhead Tunnel, and of the whole line between Manchester and Sheffield, took place on Monday, December 22, 1845. The single line through the tunnel soon proved to be an acute bottleneck, and in 1847 work upon a second bore was begun; this was opened for traffic on February 2, 1852.

In 1936 the directors of the L.N.E.R. approved a scheme for electrifying the whole of the railway from Manchester London Road to Sheffield Woodhouse, together with the branches to Manchester Central (via Fallowfield), Ashton Park Parade, Glossop, and Wath, a total of 74.6 route miles. The distinguishing feature of this scheme is that all classes of traffic will be electrically hauled, and it will afford the first British example of a completely electrified railway service. The electrification of the Manchester-Sheffield line, one of the strongest incentives to which was the likelihood of securing a 25 per cent. increase in the number of trains operated through the Woodhead Tunnel, was well in hand before the outbreak of war in 1939. Overhead equipment for carrying the 1,500-volt d.c. transmission wires had been erected for some miles, work had been begun on the new locomotive running shed at Darnall, the first in the country to deal with both steam and electric locomotives, and orders had been placed for most of the necessary rolling stock, namely, 70 mixed-traffic electric locomotives and four six-coach multiple unit electric trains, the latter intended for the Manchester-

\* The story of the tunnel has been told in the second (Woodhead Centenary) edition of "Through the Backbone of England" by Stanley Chadwick, the Venturers Press; Huddersfield, price 1s.; the history of the Manchester-Sheffield Railway is being described in an official historical publication of the L.N.E.R. by George Dow



Glossop suburban service. The war called a halt and only one of the locomotives, upon which work was well advanced, was completed. Numbered 6701, she ultimately underwent tests on the Manchester, South Junction & Altrincham electric line with the haulage of both passenger and freight trains. The time is not far distant now when work upon this important project will be resumed.

### Wheel Hunting and Irregular Rail Wear

A USEFUL service was performed by Mr. A. H. Toms in calling attention, in the August issue of the *Journal of the Permanent Way Institution*, to the problem generally known as the "hunting" of railway rolling stock wheels. In addition to the swinging of coach bogies about their pivots, within the limits permitted by the wheel flanges, there is the constant side-to-side movement of individual pairs of wheels. The standard taper of coning of wheel-treads is at 1 in 20, so that the tread of a new tyre may be at right-angles to the centre-line of the rails; experiments have been tried in varying the angle of taper of the treads and the radius of the railhead, but the wear of tyres and rails complicates the problem, and hitherto has made it difficult to come to any final conclusion as to how the hunting problem may be solved.

As the author of the above article points out, hunting is seen in its most persistent form on multiple-unit electric passenger stock. In trains of this description, motive power is being applied at different points along the length of each train, which is thus in part being pushed and pulled; as a result, there is not the steady influence of couplings in tension throughout the train to assist in keeping the coach underframes in line. Moreover, the heavy and relatively unsprung mass of the motor-bogies on multiple-unit stock has its influence in increasing oscillation effects. When the lateral amplitude of the oscillation exceeds the limits of the coning, the wheel-flanges come into sudden and more or less violent contact with the rail-head, and produce jerky changes in the obliquity of the axle, with perceptible sensations of oscillation in the coach itself. Indeed, persistent bogie hunting, due chiefly to worn tyres, can cause bogie stock to ride most uncomfortably. Of even greater importance than the discomfort of passengers is the wear-and-tear of rolling stock and the damage to rails caused in this way.

In the author's experience, it has been no infrequent occurrence to be compelled to remove rails from the track before they are worn down to the depth that normally would justify renewal, because of excessive alternating side-cutting due to the persistent oscillation of electrically-operated suburban stock. The normal running speed of this stock has caused the bogie hunting to synchronise with the frequency of oscillation of the coach-body itself, and this has aggravated the trouble. There would appear to be scope for more effective damping systems, whether by means of rubber, oil, non-resonant springs, or in other ways, with a view to the suppression, in part or the whole, of these undesirable movements.

It would also seem probable, though the author does not mention the point in his paper, that the irregular surface-hardening of rails, and of heat-treated rails in particular, which has been causing considerable concern to British railway engineers in recent years, may be directly due to wheel-hunting. Not only has this trouble been the most pronounced on lines carrying electric services, but its most extreme development has been on straight tracks carrying trains which run at fairly even speeds, whereas rails laid in tracks with considerable curvature, or over which there is much acceleration or braking, have suffered little, if at all, in this way. Passengers are made aware of the development of this defect by the extremely noisy running of the trains over lines so affected.

It is also on straight track at even speeds that the hunting of wheels may be expected to develop to its maximum intensity, and to produce transverse frictional effects on the railhead which encourage the development of irregular work-hardening of the running surface. Steel structures that work-harden the most readily as, for example, the sorbitic, may be expected to suffer in the maximum degree, and this is exactly what has happened. It would be unfortunate if so promising an improvement in the wearing capacity of the steel rail as that offered by the sorbitic treatment were to be condemned for reasons for which the rail is in no way responsible, and if the assumption is correct,

this consideration should provide an added urgency to the enquiry as to how the harmful effects of wheel-hunting may be reduced.

### The "Metropolitan Railway" Stations An Architectural Commentary

By Julian Leathart, F.R.I.B.A.

IN writing these notices, I suppose that I should tread warily lest, in a railway journal, I make comment which may not be as uncritical as it ought to be for the occasion.

My remarks on the approaches to the main-line London terminal stations which appeared in a recent issue of *Building*, evoked a very pretty piece of doggerel verse by a contributor who appeared to be slightly horrified at my audacity in referring to the subject in scornful terms. Obviously there is a prevailing opinion around and about that the British railways and all their doings are sacrosanct and therefore above reproach. It is far from my purpose here to say a word which would do anything to undermine this amiable illusion. In fact, there is nothing in my present subject about which it is possible to be controversial. This is a pity, as I am never averse to a spot of contention at any time.

The Western Extension line of the Metropolitan Railway was authorised by Parliament in 1864, and four years later the line was completed and working. Its construction, and I refer to the stations and their approaches in particular, coincided with a stage in the history of English architectural development which was notorious for its banality and lack of taste—an era in which man's creative ability was absorbed in the invention and perfection of machinery to the virtual exclusion of all else of a cultural and artistic character. The Victorian Gothic Revival was running its course at that time and St. Pancras Station is a surviving example of the absolute futility of forcing the "Fine Christian Architectural Style" into the strait-jacket of secular building.

By a curious chance, the Metropolitan Railway stations emerged from the Classic and not the Gothic mould, and they bear the impress of a spiritless adaptation of vaguely Italian Renaissance origins. Whether they were designed by an architect is not known; but it may be that either the building contractor employed an architectural "ghost" to produce the elevations, or that the Metropolitan Railway Company did so. In one respect, and only in one respect, do they compare with the most recent and successful English railway construction scheme. I refer to the L.P.T.B.'s Cockfosters extension line; the resemblance lies in the fact that they are all members of the same architectural family, just as the new tube stations are the offspring of a much superior parentage.

There is, however, a certain dignity in the Metropolitan stations which is as fortuitous, considering the low ebb of architectural ability of the 1860s, as it is felicitous. There is a marked degree of restraint shown in the general assembly of windows, doors, and canopies and in the proportion of wall and window openings.

I detect a snob element in the design of these stations. For instance, Bayswater and Kensington Stations, both of which were in "superior" residential districts at the time, are more opulently finished in the architectural sense. The arched-headed windows have moulded stone archivolts and there is a more generous ration of protecting canopies and balustrading above the cornices. At Paddington and Notting Hill Gate, there is a less pretentious embellishment, as befits these less socially-important neighbourhoods.

No such subtle distinctions inhibit the design of the platform enclosures, which are interesting examples of Victorian standardisation both in design and construction. They are shapely, dignified, and appropriate to their purpose. The metal arched-rib roof construction is most successful in design, for it produces an elegant internal contour line and satisfying lightness of effect. It would seem that the contemporary structural engineer is engaged in the process of re-discovering the arched-rib as an economic and aesthetically sound method of roofing in large-span voids. We are likely to see many such roofs in post-war building. One of the illustrations on page 643 shows the scaffolded gantry from which the ribs were assembled in sections and built up to the completed member.



## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### The Jamaica Railway, 1845-1945

Jamaica Government Railway,  
Kingston, Jamaica. November 22

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I received yesterday morning, November 21, 1945, your letter dated November 15, enclosing a copy of the November 16 issue of *The Railway Gazette*.

I wish to let you know how very much I appreciate the kind thought which prompted you to send me this issue by air mail at considerable cost to arrive on the morning of the Centenary. The article has been read with great interest by many of us.

Yours sincerely,

H. R. FOX  
General Manager

### Demobilisation of Railway Staff

London S.W.1. December 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Having just been demobilised I read your article on the above subject, in the issue of December 7, with great interest. It is good news indeed to hear, as you put it, "that the companies are not limiting themselves merely to their legal obligations in the matter." The system of special training is obviously an excellent one, particularly suiting the man who held a very junior supervisory or clerical post, or the man who was in the wages grades. In both these cases the personnel on return from H.M. Forces will clearly have a very good chance of showing what they can do in the way of accepting increased responsibility; the junior official to fill a higher appointment, and the wages grades staff to enter the supervisory or salaried clerical grades.

There is, however, no mention made of the staff who held positions of "medium" responsibility before the war. I refer to the grades such as Assistant Yardmaster, Chief Controller, Loco. Depot Foreman, and so on. In many cases their positions have been filled by juniors three or four times during the war, while the former occupants were in the Forces. These juniors have all forged ahead, sometimes to a permanent appointment and sometimes to a temporary one. I know the original occupant of such posts, who is in the Forces, is supposed to have been considered for promotion, but it is not too hard to imagine that "out of sight out of mind" may have lived up to its reputation as a true saying. It appears to me that these officials of "medium" grades are likely to find that after six years many

of their juniors in the service are well dug in in responsible positions.

I feel that the companies might have been more definite in these cases, and said quite plainly that no member of the staff would suffer from having served in H.M. Forces. It appears to me that we should return to the railways in our railway seniority, and if necessary displace these juniors who have received promotion. From this original placing in seniority order, thereafter of course the usual selective system or "best suited" method would continue; but the returning railwayman would at least have a fair start and the rest would be up to him.

Yours faithfully,

SAPPER

### Pilfering on Railways

The Chief of Police (Southern Area),

London & North Eastern Railway,  
Hadley Wood, Barnet, Herts. January 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was interested in your article on page 589 of your December 7 issue, dealing with anti-pilferage methods employed in Kenya & Uganda. During, and particularly after, the cessation of hostilities in North Africa, the raiding of goods wagons by organised gangs of Arabs became very serious. Movement Control, for which I was responsible, organised two flying squads, one working from Constantine to Tunis and the other Algiers to Constantine.

The patrols were composed mainly of officers armed to the teeth, who worked in close collaboration with the French civil police. I do not think that their methods would bear too close an examination, but they did make many good captures, and materially reduced pilferages on the railway.

In addition to the flying squads, armed guards were provided for the trains, the headquarters being at Constantine, and we also worked very closely with them. These squads had orders to shoot anyone seen raiding or attempting to board wagons in motion. Several Arabs were, in fact, shot.

The price, I think, paid for a dead Arab as compensation amounted to 80 francs and this, compared with a bribe of 200,000 francs to one of our Movement Control sappers, who was asked to waylay a wagon of sugar, rather emphasised the fact that death for an Arab felon was not as sweet as sugar!

Do you know whether the police patrols in Uganda are armed and have similar powers to those granted to train guards in North Africa?

Yours faithfully,

N. MCK. JESPER

[Perhaps the administration of the Kenya & Uganda Railways & Harbours would enlighten us on the point raised in Mr. Jesper's final paragraph.—Ed., R.G.]

### Publications Received.

**Transport Problems which arose from the War of 1914-1918 and the Work of Restoration undertaken in this Field by the League of Nations.** 1945.

London: Allen & Unwin Limited (League of Nations Publications Dept.), 40, Museum Street, W.C.1. 52 pages. 9 in. x 6½ in. Paper covers. Price 2s.

**List of Multilateral Conventions, Agreements, etc., relating to Communications Questions.** Same Publishers. 38 pages. 13 in. x 8½ in. Paper covers. Price 2s.

The above-mentioned study of transport problems brings out the important part played by the League of Nations in the reconstruction and reorganisation of communications, especially in Europe, after the war of 1914-18. In 1914 there was an organised international collaboration in Europe which was largely responsible for the increased efficiency of the transport services. In 1919, a full system of agreements and conventions had to be re-instituted, and the experience gained in this respect should prove of great value to-day even though the problems to be solved in the new post-war period are on a much greater scale. It shows what can be achieved in this field by concerted international action. Devastation by the

enemy in France during the 1914-18 war was confined in the main to the north and east and to the vital industrial area concentrated there, but the ports remained largely untouched. Belgium was entirely overrun and the ports of Ostend and Zeebrugge were wholly occupied by the enemy. Heavy as was the damage done in both countries to the means of communication these were restored unexpectedly quickly by the indomitable spirit of the inhabitants, who also were able to employ German labour by way of reparations. Specially difficult were the conditions which arose from the dismemberment of the former Austrian Empire. Tariff barriers between the "Succession States," and the new restrictions on the navigation of the Danube were among the problems to be solved. These matters as well as the rehabilitation of the Austrian Federal Railways receive full attention in this pamphlet on the work of the League of Nations. The List of Conventions, etc., relating to Communications Questions, etc., which we have also received, is a useful record of the work in this respect steadily carried out by the League of Nations.

**Ploughshares into Swords.**—A booklet under this title has been issued by the United Steel Companies Limited setting out the war record of the company. The steel

ingot output of the associated companies is the largest in the British Commonwealth, and employs 40,000 men and women, 5,000 of whom are at present serving in the Forces. Normally these companies do not make engines of war but confine their application in construction, transport, and machinery. The booklet outlines the story of how in time of national emergency the whole of their great resources were diverted to provide equipment for the armed forces. Outstanding features were the production of over half a million tons of shell steel and of over 280,000 major gun forgings by Steel Peech & Tozer, one of the company's branches. The proportion of plates supplied by the Appleby-Frodingham Steel Company for naval and mercantile ship-building rose from 20 per cent to 50 per cent, of its increased output; the same branch made pre-fabricated tank landing craft. The output of stainless steel sheets for aircraft made by Samuel Fox & Co. increased fourfold. Apart from maximum production for wartime purposes from its own plant, the company operated no less than 13 agency factories on behalf of the Government. The graph contained in the booklet showing the production of major gun forgings illustrates the progress of the 1939-1945 war; a rapid rise in output is shown up to the time of the turning point of the war at El Alamein.

## The Scrap Heap

One of the strange ironies of the present situation is the sight of a Labour Government tying their country to capitalist economics at the very moment when they are claiming to be about to destroy the capitalist system.—*Mr. Quentin Hogg, M.P., in an article in "The Daily Mail" on the U.S.A. loan.*

### Whittington's Travels

A member of our staff, Mr. T. P. Whittington, who had been away on war service since August, 1939, recently called to report his impending demobilisation and to agree a date on which to resume his civilian duties. On hearing his account of his war service on three continents we thought it so interesting that we asked him to record it briefly in the form of a diary which we print below. To give it a railway association we would add that Mr. Whittington is a nephew of the late Mr. Frank R. Potter, Superintendent of the Line, G.W.R. (1936-1940), and a grandson of the late Mr. Frank Potter, General Manager, G.W.R. (1912-1919).

*February, 1939*

Joined Territorial Army as a Gunner.

*June, 1939*

Called up for one month's training.

*August, 1939*

Mobilised for Active Service.

*September, 1939-February, 1940*

Served on various gun sites in London, promoted in turn, L/Br., Bdr., Sgt.

*March, 1940*

Mobilised for France—did not go as Hitler got there first.

*April-July, 1940*

Various anti-invasion duties.

*August, 1940-May, 1941*

London "blitz." Served Isle of Dogs, Hackney, Hyde Park. Regiment shot down record number of planes for A.A. Recommended for Commission on several occasions—refused owing to the heavy action and the fact that I was in any case doing officer's duties in action.

*June, 1941*

Embarkation leave.

*July, 1941*

Sailed from Liverpool. Continuous U-boat attacks—saw two destroyed. Arrived Sierra Leone and sailed again for the Gambia.

*August, 1941*

Digging in on French Senegal border—60 miles from Dakar.

*September, 1941-April, 1942*

In action against Vichy French. Nigerian troops arrived in November and were gradually trained for incorporation in the Regiment. Did some liaison work with infantry on and over the French border.

*May, 1942*

I was found in charge of the Battery by G.O.C., Gambia—being satisfied with his enquiries as to why an N.C.O. was doing this work, I was interviewed at H.Q., and received immediate commission.

*July, 1942*

Transferred to Sierra Leone. Still in action with Vichy French.

*August, 1942-February, 1943*

Various stations in Sierra Leone.

*March, 1943-April, 1943*

28 days recuperative leave in England. U-boat attacks both ways.

*April, 1943-June, 1943*

Sierra Leone—then Gold Coast and Nigeria. Greatly impressed with Gold Coast. This colony and Nigeria vastly superior to the other two.

*July, 1943*

Sailed for India. Acting Battery Captain—in charge of all equipment and baggage. Stopped at Cape Town and Durban. A very great welcome. Durban and the surrounding country most impressive. Much amusement caused by taking the Nigerians round Durban in parties—they were completely overwhelmed.

*August, 1943*

Arrived Bombay. Camped 30 miles outside Poona. Contacted my sister who was nursing in Poona.

*September-October, 1943*

Intensive training on the Deccan. Nigerians shape very well—they are now working radar predictors, etc., as well as guns with less and less European supervision.

*November, 1943*

Entrained for Assam. Again appointed in charge of all baggage and equipment. 16 days by train. On one occasion engine uncoupled and left the train in the middle of "nowhere" with no communications and did not come back until the next day. Transhipped on river steamer on Bramaputra, then metre gauge tea estate railway and finally to positions on the borders of Butaan.

*December, 1943-September, 1944*

General Service, N. Assam, borderland of India, Burma, Tibet, China. West African troops settled down well, very little friction with Indians. Flew into China in U.S.A. Liberator—very dirty and squalid. Qualified as Radar Instructor. Visited Calcutta and Tatanagar—Saw Tata Iron & Steel Works—the largest in British Empire. Very critical time, Spring, 1944, Battle of Kohima and Imphal plain.

*September, 1944*

Two weeks' leave Darjeeling. Travelled on Highland Railway. Magnificent scenery over Mt. Everest and Kunchingunga.

*October, 1944-March, 1945*

Battery crossed upper Bramaputra. In charge of loading and transshipping equipment worth £100,000, built jetties across mudflats, etc. Responsible for all transport, rations, clothing, pay and general accounts. Member of Audit Board. Manipur Road—Imphal—Kohima—Peju and Assam—Burma border generally.

*April, 1945*

Due for repatriation but held up by orders of C.O. Regiment complimented by G.O.C. in C., West Africa.

*May, 1945*

Visited my sister, now Matron of hospital at Benares. Entertained by Resident and by Nizam of Vizianagram. Trip by night down Ganges with Nizam in his barge. Magnificent hospitality—ten-course dinners—champagne—brandy, etc. Shown over Nizam's palace—wonderful gold throne and tiger skins everywhere. Invited by Nizam to visit him this winter and play cricket for his side (he skippered the All-India XI).

*June, 1945*

Brigade ceases to be operational. Preparing to go home.

*July-August, 1945*

Calcutta—Poona—Bombay—Dhond—Khumberghen—Deolalii. Very impressed by Bombay—far superior to most Indian cities.

*September, 1945*

Sailed for England.



*The decorated L.N.E.R. locomotive No. 8304 "Gazelle" which hauled the first train to reopen the Harwich-Hook of Holland service on November 14*

### 100 YEARS AGO

*From THE RAILWAY TIMES, Dec. 20, 1845*

**MIDLAND RAILWAY.**—Nottingham and Lincoln, and Syston and Peterborough Railways.—To Timber Merchants—Contract for Sleepers.—The Directors are prepared to receive Tenders for the supply of 150,000 Sleepers, to consist either of sound Baltic Timber, or of sound well-grown Larch.

Length 8 feet 6 inches. If of Baltic timber, the Sleepers must be cut either of a triangular form out of Balke 13 inches square, with the arrises taken off, or of a rectangular form of the scantling of 8 by 5½. If of Larch, they must be of not less area at the smallest end than 10 by 5, half round, measured within the bark.

The Tenders must not be for less than 20,000, to be delivered at the following places:—

70,000 at Gainsborough.  
25,000 at Boston or Spalding.  
20,000 at Wisbech.

35,000 at Syston, or on any part of the Melton Canal, between Syston and Melton—

one-half on or before the 1st of March, 1846, the remaining half on or before the 1st of May, 1846.

The Tenders must be delivered to the Secretary not later than Ten o'Clock on Monday, the 8th of January, on the morning of which day they will be taken into consideration.

By order,  
J. F. BELL, Secretary.

Derby, December 16, 1845.

### OPERATING ODES

#### Passenger Train Navigation

The night mail's very late, sir,  
There's fog way down the line.  
Perhaps you'd like to wait, sir,  
In this 'ere room of mine.

We're used to this delay, sir,  
And waiting doesn't pall,  
Why, only yesterday, sir,  
One never came at all.

But we can always tell, sir,  
How late a train will be.  
These tables give it well, sir,  
If you can follow me.

From table three you fix, sir,  
A constant for the day,  
Divide by column six, sir,  
In any simple way;

Then take the Greenwich date, sir,  
With full or quarter moon,  
And add a special rate, sir,  
Unless it's after noon;

From table twenty-two, sir,  
Deduct the month and year,  
And when you've worked it through, sir,  
The train is always here.

H. W. W.

## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### CANADA

#### Heavy C.P.R. Tourist Traffic Forecast

Early return to normal traffic conditions on the Canadian Pacific Railway was forecast by Mr. W. M. Neal, C.B.E., Vice-President of the company, who returned to Montreal on November 7 after a month's inspection trip through Western Canada. Mr. Neal based his estimate on the extraordinary rate of peacetime reconversion which had been achieved throughout the system, and a personal belief that the heavy return movement of Canadian troops from abroad, now past its peak, would be virtually completed by next spring.

Some qualification of the term "normal traffic" was made by Mr. Neal in the light of his own estimate of tourist movement next year. "I am convinced," he declared, "that the Canadian railways will be called on to carry the greatest amount of tourist business of all time during 1946. Every possible arrangement is being made to handle this movement, including the preparation of the company's resort hotels and lodges. It is hoped that labour conditions and supply will be such that all these will be opened next year."

#### New Rolling Stock and Motive Power

Attention was being given, said Mr. Neal, to greater comfort and privacy in rail travel. Several innovations had already been established in equipment now in service, such as modernised compartment and bedroom cars, new parlour cars and café services on secondary lines, and many improvements in comfort and safety for rail passengers generally.

Locomotives and freight equipment of the latest design were also being added to the company's services. Aluminium box cars, improved refrigeration, diesel shunters to reduce smoke and noise in city terminals, automatic electric signal systems to speed up traffic and to raise already high safety standards, and many other new devices were already being put into service.

### UNITED STATES

#### Illinois Central Acquires T.V.A. Line

The Chicago, St. Louis & New Orleans Railroad, a subsidiary of the Illinois Central System, has been authorised to acquire, at a cost of \$361,205, 5½ miles of new line in the vicinity of Gilbertsville, Kentucky, which was built by the Tennessee Valley Authority to replace a section of the main line which was submerged after the building of the great Gilbertsville Dam on the Tennessee River. The new line is carried across the river on the dam itself.

#### Santa Fe Access to Long Beach

Sanction was given recently by the Interstate Commerce Commission to the Atchison, Topeka & Santa Fe Railway System for the building of a 2-mile line which would give this company independent access to the port of Long Beach, California, adjacent to Los Angeles. The application was the result of inability of the Santa Fe to obtain running powers, on terms which it considered reasonable, over 2 miles of the Pacific Electric and 2½ miles of the Southern Pacific Companies' lines into Long Beach.

A new examination of the question by the other two railways has now resulted in the Santa Fe being offered the desired running powers, at a cost of \$8,700 a year, plus a fixed proportion of the cost of any addition to, or improvement of, the line, to handle the additional traffic, and a share in the costs of maintenance. Shunting service for the Santa Fe at Long Beach would be undertaken by the Pacific Electric. The Santa Fe has applied to the Interstate Commerce Commission to sanction the putting into execution of this agreement.

#### New Railway Access to St. Louis

An important operating development in St. Louis took effect on July 23 last, affecting the Gulf, Mobile & Ohio Railroad. That railway's trains to and from the southern states, which hitherto have terminated at and started from East St. Louis, began to use the Union Terminal in St. Louis. Stops are still made in each direction at East St. Louis, but the Gulf, Mobile & Ohio bus service between East St. Louis and St. Louis has been withdrawn. Included among the trains concerned are the diesel-hauled "Rebel" and "Gulf Coast Rebel" trains to and from New Orleans and ports on the Gulf of Florida.

The transfer into St. Louis is doubtless not unconnected with the projected merger between the Gulf, Mobile & Ohio and Alton Railroads, as the latter's Chicago-St. Louis passenger service uses the St. Louis Union Terminal. The plans of the Atchison, Topeka & Santa Fe Railway System to enter St. Louis by using the tracks of the Chicago, Burlington & Quincy and Alton Railroads, to which reference was made on page 314 of the September 28 issue of *The Railway Gazette*, also have been approved by the board of the first-mentioned company.

#### Opening of Bozeman Tunnel

Approximately \$1,350,000 has been spent by the Northern Pacific Railway on the Bozeman Tunnel (on its main transcontinental line in Central Montana), which was opened for traffic on July 28 last. This tunnel, 1,000 yards long, forms part of a line improvement scheme which has been carried out by the Northern Pacific in this area.

### FRANCE

#### American Surplus Engines on Sale

The American Army Liquidation Commission recently offered 1,667 surplus locomotives for sale in Paris. These engines, valued at \$71,000 each, are at present distributed in railway yards throughout France, Belgium and Germany. Bids were expected from various European Governments.

It is believed, however, that the French National Railways Company (S.N.C.F.) is not anxious to acquire any of them. The S.N.C.F. officials prefer to buy engines built to their own specifications. The American locomotives, built for war purposes, already have had a good deal of wear and tear, and they would be costly in upkeep, because French standardised spare parts cannot be used in them. Also, the French hope to rehabilitate a large number of locomotives taken to Germany during the war.

#### Diesel Plans

It is understood that the S.N.C.F. intends to place contracts in the United States for 100 diesel locomotives. State-

ments recently published to the effect that France intends to acquire several thousand diesel locomotives under a ten-year plan appear incredible to French railway and official circles. It is pointed out that it would be impossible to amortise the cost of such numbers with the extension of railway electrification in the near future. Further, there is no well-defined ten-year plan in existence at present. The S.N.C.F. must plan ahead for 1946 and 1947, but long-term planning is in abeyance until urgent requirements are met.

Among matters considered urgent, the provision of diesel railcars may be included. In the pre-war period, railcars on the S.N.C.F. lines ran about 2,300,000 miles a month. Since the liberation of France, about two-fifths of the railcar services have been re-established; but the number of cars available is small. Accordingly, a plan for the building of cars of three types has been drawn up. The three proposed types are:

(1) A 600-h.p. railcar, to accommodate 106 persons (with 68 seated). It could haul two, or even three, trailers, at about 120 km.p.h. (75 m.p.h.).

(2) A 300-h.p. railcar, to carry up to 100 passengers on branch lines to or from main-line expresses. In rush periods two of these cars might be coupled, and a trailer hauled. Each car would run at about 100 km.p.h. (62 m.p.h.).

(3) A 150-h.p. railcar, to carry 80 passengers, and to run at some 75 km.p.h. (47 m.p.h.). Such cars would run on secondary lines, and stop at all stations.

Railcars of the S.N.C.F. are intended to run for a total of some 2,356,000 miles a month (or slightly more than before the war). But as their passenger capacity would be greater, they could provide for a considerable increase in traffic. The rolling stock required is 600 railcars and 450 trailers, of which at least two-thirds would have to be built.

#### Restoring International Services

A message from Madrid reports the holding of a conference at Seville between French, Spanish, and Portuguese railway officials, at which a timetable was agreed for running the Sud Express from Paris to Lisbon via Irun, and arrangements were made for restoring traffic between France and Spain through the Pyrenees tunnel to Canfranc, the Spanish frontier station. A through sleeping car between Paris and Rome, via Basle, has been attached to the Arlberg Express in both directions since November 13.

#### Later Trains on Paris Metro

The Paris Metro timetable was recently extended until 1.15 a.m. but the expected re-opening of 40 stations on the Metro lines has been postponed until increased electric power supplies and more coaches are available.

During the war, the Metro has been the only means of transport for Parisians, but buses are now running between the St. Lazare railway station and Vincennes. Other lines are to be re-opened soon. The Metropolitan company, which controls the bus system, hitherto has confined its bus operations to the suburbs, running buses from the Metro terminals into the outlying districts.

#### Wages Claims

French railwaymen are demanding a minimum monthly wage of fr. 4,000 (£20 at the official exchange rate of fr. 200 to the £). Recently a one-hour token strike stopped all traffic at Lille, Douai, Arras, and Amiens. The men also claim an advance of fr. 1,000 a month before November 30 on account of the sums due under the wage revision scheme.



## Some Notes on the "Merchant Navy" Class Locomotives, Southern Railway—I\*

*Mr. O. V. S. Bulleid's account of how operating requirements dictated the design, and how permanent way restrictions were overcome in its development*

IN designing these engines, passenger trains of 550-600 tons were envisaged, with average start-to-stop speeds of a mile a minute on short runs (for example, to Dover) and 70 m.p.h. on longer runs (to Exeter), with a maximum of 90-95 m.p.h. The ever-increasing proportion of express goods trains also made it desirable to have general-purpose machines. Allowing piston speeds as high as 2,000 ft. per min., a locomotive with a 6 ft. 2 in. wheel can operate trains at the highest speeds likely to be required in ordinary service.

For such heavy trains, at high average speeds, the tractive-effort should be 35,000-40,000 lb. and the adhesive weight at least 63 tons. A grate area approaching 50 sq. ft. is needed if sufficient water is to be evaporated to supply the cylinders with all the steam they can use at maximum rates of consumption. Such a grate means a large boiler, large firebox area and volume, and adequate water capacity, with sufficient tubes to ensure that as much as possible of the heat generated (but not absorbed) in the firebox is transmitted to the water in the barrel before the gases reach the smokebox. Such a boiler must be of considerable weight. The loading gauge, however, limits both height and width; turntables limit the overall wheelbase of engine and tender to 70 ft.; and the maximum weight allowed on one pair of wheels is 21 tons. The total weight of engine and tender, moreover, is limited by the strength of the bridges.

The design, therefore, is based on the following basic data: adhesive weight, 63 tons; tractive effort, 37,500 lb.; driving-wheel dia. 6 ft. 2 in.; boiler pressure, 280 lb. per sq. in.; grate area, 48½ sq. ft.; total weight of engine, 94½ tons; total weight of engine and tender, 145 tons; three cylinders, 18 in. dia. by 24 in. stroke; wheel arrangement, 4-6-2. To design an engine of the power required, with adequate boiler capacity, within such a restricted weight necessitated particular attention to the reduction of weight wherever possible. The principal innovations in British practice introduced in these engines are (1) high-pressure boiler with welded-steel firebox fitted with syphons; (2) enclosed motion with pump lubrication; (3) new valve gear incorporating piston valves operated between the heads; (4) new wheel centres with new tyre fastening.

The pressure of 280 lb. per sq. in., adopted to limit the cylinder dimensions, approaches the limit for simple-expansion engines, especially when working at very early cut-off and with reduced steam chest pressure and severe wiredrawing of the steam. Research has shown the unsuitability of copper firebox plates and the wasting away of stay bolt heads at 220 lb. per sq. in. (395 deg. F. steam temperature); copper would be even less suitable for the intended pressure of 280 lb. per sq. in. (416 deg. F. steam temperature). The short life of steel tubes and the trouble due to pitting when used with copper fireboxes, considered to be mainly due to electrolytic action, suggested the use of steel fireboxes.

Steel fireboxes were said to be unsatisfactory, because of the plates cracking. Copper fireboxes, however, are not immune from this trouble. There has been no experience of steel fireboxes in England in recent years, although it was known that firebox steel plate had improved in quality.

A special firebox plate manufactured by one steelmaker has been found to be better than anything available previously. The analysis of this plate is (maximum percentages): carbon, 0.15; manganese, 0.55; phosphorus and sulphur, 0.03. The mechanical properties are: ultimate tensile strength, 24-28 tons per sq. in.; elongation on 8 in., 25 per cent. (minimum). The standard American firebox plates have: carbon, 0.25 per cent. (max.); manganese, 0.3-0.6 per cent.; phosphorus and sulphur, 0.04 per cent. (max.); and the mechanical properties are similar.

This new plate is almost free from creep—a great merit. It is readily weldable; and a completely welded inner and outer firebox was a practical possibility, in view of electric welding developments. As riveted joints would be suppressed, there would be no double thickness of metal to cause trouble through overheating and burning away. Moreover, should cracks develop, there would be no difficulty in cutting out the defective piece of plate and welding in a new piece *in situ*. The use of steel

(Continued on page 649)

\* Paper by Mr. O. V. S. Bulleid, Vice-President I.Mech.E. (Chief Mechanical Engineer, Southern Railway), presented before the Institution of Mechanical Engineers on December 14, 1945. Abridged

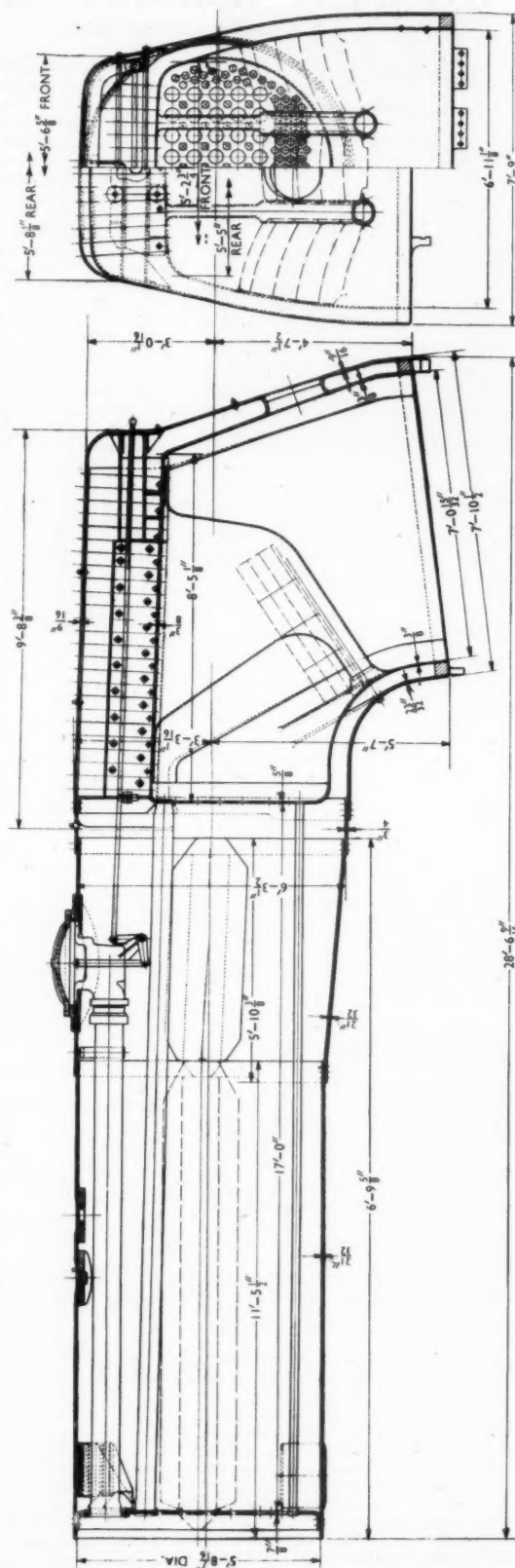


Fig. 1—General arrangement of boiler

**Building the Inner Circle Railway—4**  
1865—1868



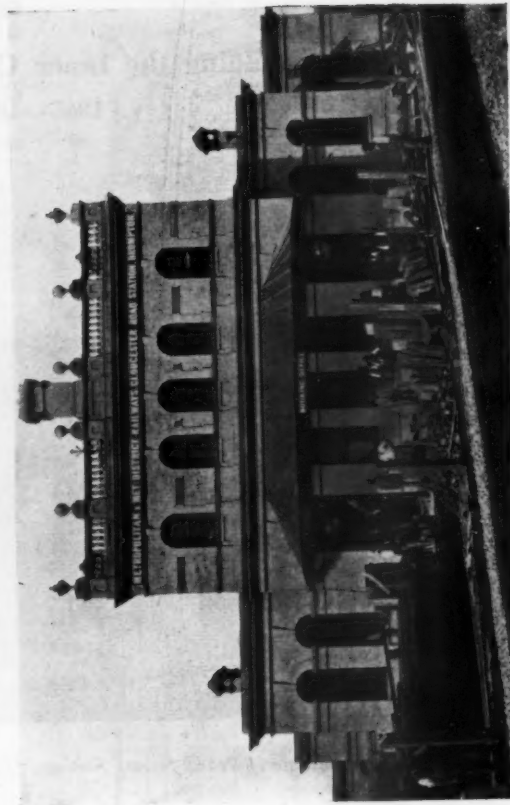
*Street elevation of Paddington (Praed Street) Station, Metropolitan Railway, as opened in October, 1868*



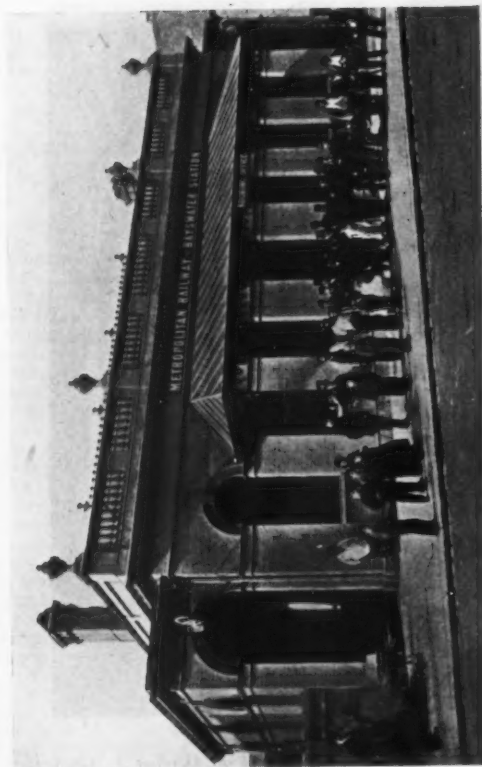
*"Gloucester Road Station, for Brompton," in course of construction ; it was opened on October 3, 1868*



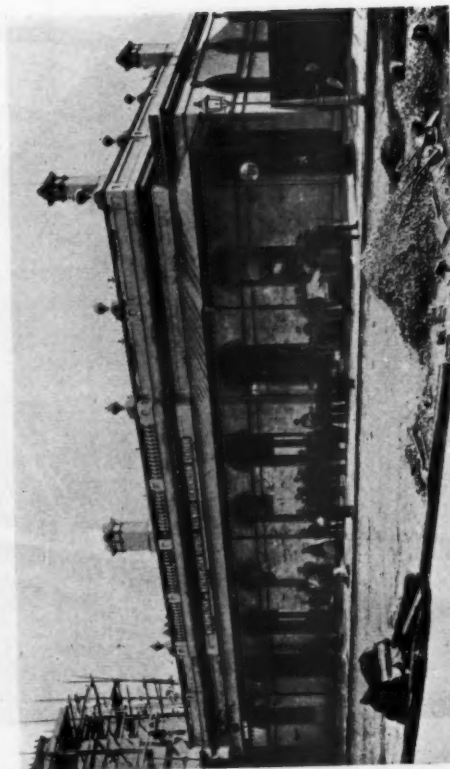
Notting Hill Gate Station, Metropolitan Railway, in 1868



Street elevation of Gloucester Road Station, Brompton, Metropolitan and Metropolitan District Railways, in 1868



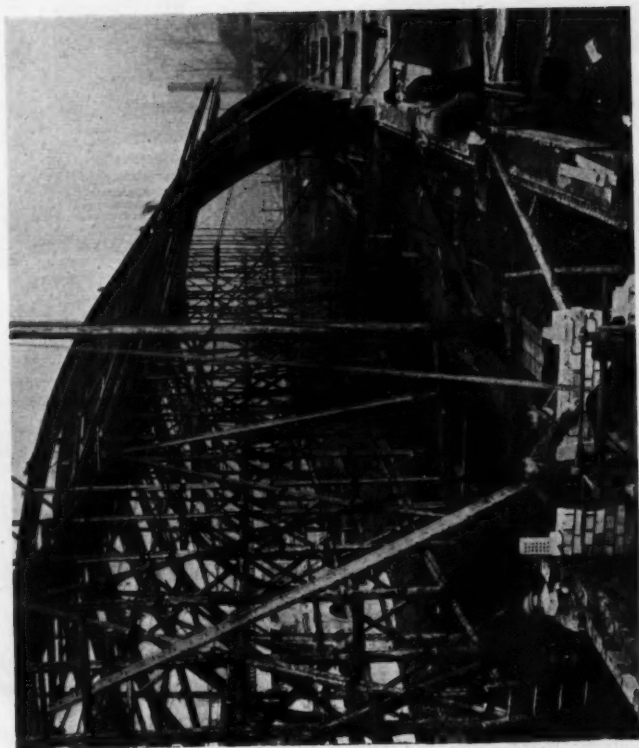
Baywater Station, Metropolitan Railway, at its completion in 1868



Street elevation of Kensington Station (afterwards called High Street, Kensington), Metropolitan and Metropolitan District Railways, on its completion in 1868

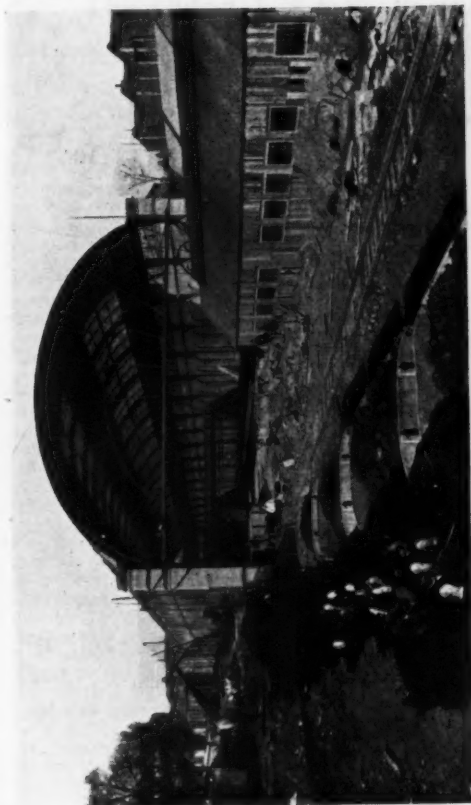


### Metal Arched-Rib Station Roof Construction



*Timber scaffolding method of erection of the metal arched ribs, which were assembled in sections and built up to the completed member*

In commenting on the design of these stations in this issue (page 636), Mr. Julian Leathart, F.R.I.B.A., remarks: "The platform enclosures are interesting examples of Victorian standardisation both in design and construction. They are shapely, dignified, and appropriate to their purpose. The metal arched-rib roof construction is most successful in design, for it produces an elegant internal contour line and satisfying lightness of effect. It would seem that the contemporary structural engineer is engaged in the process of re-discovering the arched-rib as an economic and aesthetically sound method of roofing in large-span voids. We are likely to see many such roofs in post-war building."



*Completed metal arched-ribbed roof at Kensington Station, Metropolitan Railway*



*Interior of Kensington (afterwards High Street) Station, facing northward, shortly before its opening in October, 1868*



*Notting Hill Gate Station, Metropolitan Railway, looking towards High Street, Kensington, in 1868*



*Interior view, facing southward, taken during the final stages of construction, in 1868, of Kensington (afterwards called High Street) Station, Metropolitan and Metropolitan District Railways*

*Imp*

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## The Oldest L.N.E.R. Pacific is Rebuilt

*Important modifications bring the late Sir Nigel Gresley's famous design up to date*

THERE can be few British locomotive classes of this century which could equal the performances of the late Sir Nigel Gresley's famous Pacifics, the first of which, appropriately named *Great Northern*, appeared as G.N.R. No. 1470 in April, 1922, the last year of the existence of that undertaking as a separate company. From the first, wide publicity has been directed on to the Gresley Pacifics, one of which attracted world-wide attention as one of the most notable exhibits at the British Empire Exhibitions at Wembley in 1924 and 1925.

A study of the late Sir Nigel Gresley's locomotive designs, in the order of their appearances shows how he was experimenting with, first, three-cylinder 2-8-0s, and later with three-cylinder 2-6-0s until he had gained sufficient data to enable him to launch his first main-line express locomotive—a design which was destined to become his masterpiece. These locomotives were built in successive batches, of varying numbers in each, and a general improvement in details is traceable throughout, though the basic proportions have remained unaltered. The earliest engines were indeed susceptible to a good deal of improvement, the most urgent need being a redesign of the valve gear to the long-travel style so completely justified by the famous G.W.R.-L.N.E.R. exchange of locomotives in 1925.

The next big step forward came about two years later, with the substitution of a 43-element superheater for the 32-element variety originally fitted, and the raising of the boiler pressure from 180 to 220 lb. per sq. in. This type remained more or less standard until the arrival of the ultimate examples of the class in 1935 and 1937—the streamline "Silver Link" and "Coronation" (or "A 4") types, which ensured the enduring fame of the Gresley 4-6-2s by their astonishing speed exploits in the late 1930s.

The pioneer engine, mentioned above, now No. 4470, has been rebuilt completely

by Mr. E. Thompson, the present Chief Mechanical Engineer of the L.N.E.R., and has been radically altered and modernised; it has been made much more powerful in the process. Unlike some of the other Gresley engines rebuilt by Mr. Thompson, No. 4470 remains a three-cylinder machine; nevertheless there are many important changes.

As originally designed, with a boiler pressure of 180 lb. per sq. in., and three cylinders 20 in. dia. by 26 in. stroke, the tractive effort amounted to 29,835 lb. By the provision of an "A 4" type boiler with a pressure of 250 lb. per sq. in., the tractive effort has been raised to 37,397 lb. The cylinders have been reduced from 20 in. to 19 in. dia., and the drive has been divided between the first and second coupled axles. The standard type of built-up crank axle with balance weights formed by extensions of the crank webs is now fitted in the leading coupled wheels and is driven by the centre cylinder.

In place of the conjugated 2-to-1 gear levers for actuating the centre valve, an independent set of Walschaerts valve gear is provided, and is operated by an eccentric having a throw of  $4\frac{1}{2}$  in. which is mounted on the crank axle. The exhaust from the outside cylinders passes along the outside of the frames and enters the inside cylinder casting where it joins the inside exhaust at the blast pipe base, passing thence to a double chimney of the type used on other Pacific engines. This arrangement of the cylinders has altered completely the framing at the front end; the bogie has been moved nearly a yard farther away from the leading coupled wheels, so that the total wheelbase of the engine has been increased from 35 ft. 9 in. to 38 ft. 5 in. The outside cylinders are placed farther back, so that the very long connecting rods of the original type have had to be replaced by much shorter ones. Another alteration is the provision of a standard dropgrate, fitted in conjunction with a hopper ashpan, enabling

ashes to be released without the necessity of a man going underneath the engine. Electric lighting is also provided, and the dynamo is driven from the left-hand trailing bogie wheel. The weight of the rebuilt engine in working order is some 9 tons greater than the original.

Originally classified "A1," the locomotives were subsequently designated "A10"; No. 4470 has now had the classification "A1" restored.

The appearance of the original and rebuilt locomotive is shown on page 646 and a comparison is given in outline diagrams and in the appended table:—

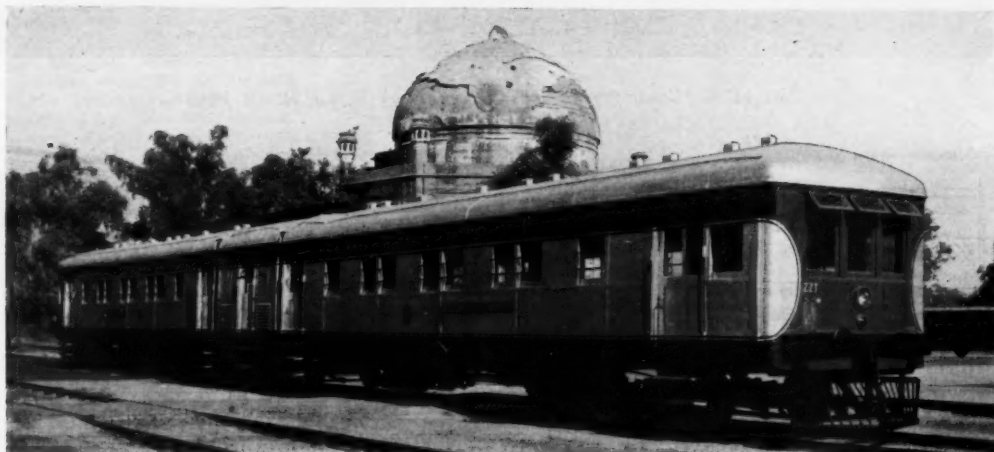
	Class "A10"	Class "A1"
Cylinders (3), dia. ...	20 in.	19 in.
" " stroke ...	26 in.	26 in.
Type of valve gear—		
Outside ...	Walschaerts	Walschaerts
Inside ...	Gresley	Walschaerts
Maximum cut-off ...	65 per cent.	75 per cent.
Maximum valve travel ...	$5\frac{1}{2}$ in.	$6\frac{1}{2}$ in.
Steam lap: outside ...	$1\frac{1}{2}$ in.	$1\frac{1}{2}$ in.
" inside ...	$1\frac{1}{2}$ in.	$1\frac{1}{2}$ in.
Piston valve diameter ...	8 in.	10 in.
Coupled wheel diameter ...	6 ft. 8 in.	6 ft. 8 in.
Length of boiler barrel between tube plates ...	19 ft.	17 ft. $11\frac{1}{2}$ in.
Heating surface—		
Firebox ...	215 sq. ft.	231.2 sq. ft.
Tubes and flues ...	2,715 "	2,345.1 "
Superheater ...	525 "	748.9 "
Combined total ...	3,455 sq. ft.	3,325.2 sq. ft.
No. and diameter of small tubes ...	169; $2\frac{1}{2}$ in.	121; $2\frac{1}{2}$ in.
No. and diameter of flues ...	32; $5\frac{1}{2}$ in.	43; $5\frac{1}{2}$ in.
Grate area ...	41.25 sq. ft.	41.25 sq. ft.
Working pressure ...	180 lb. per sq. in.	250 lb. per sq. in.
Safety valves, No. and dia. ...	2; 4 in.	2; $3\frac{1}{2}$ in.
Height of centre line of boiler above rails ...	9 ft. $4\frac{1}{2}$ in.	9 ft. $4\frac{1}{2}$ in.
Tractive effort at 85 per cent. boiler pressure ...	60 tons	66 tons
Total adhesive weight ...	134,400 lb.	147,840 lb.
Adhesive weight ÷ tractive effort ...	4.5	3.95
Weight in working order:—		
Engine ...	101 tons	10 cwt.
Tender ...	57 tons	18 cwt.

Total weight of engine and tender in working order ... 159 tons 8 cwt.

No. 4470 is experimentally painted Royal blue, lined out in red, which colour scheme was the standard livery of the locomotives of the former Great Eastern Railway.

(See illustrations, p. 646)

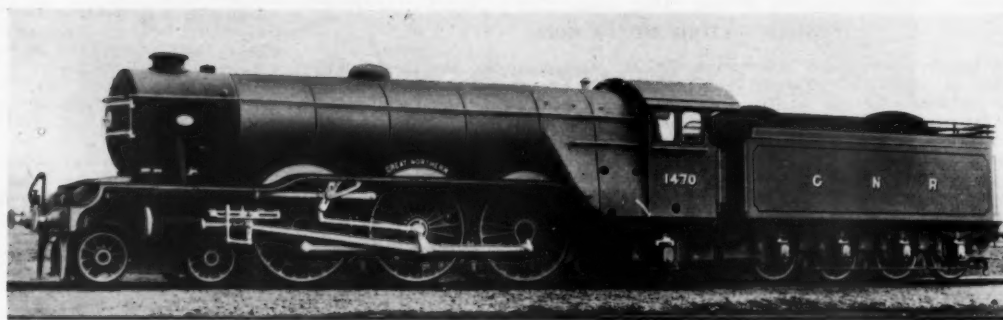
## Sentinel Unit in New Livery on N.W.R. (India)



Twin-coach Sentinel unit in service on the North Western Railway (India) between Ambala and Saharanpur. It is in the new aluminium and dark olive green livery



# The Oldest L.N.E.R. Pacific is Rebuilt



No. 1470 "Great Northern" as built in 1922 by the G.N.R.

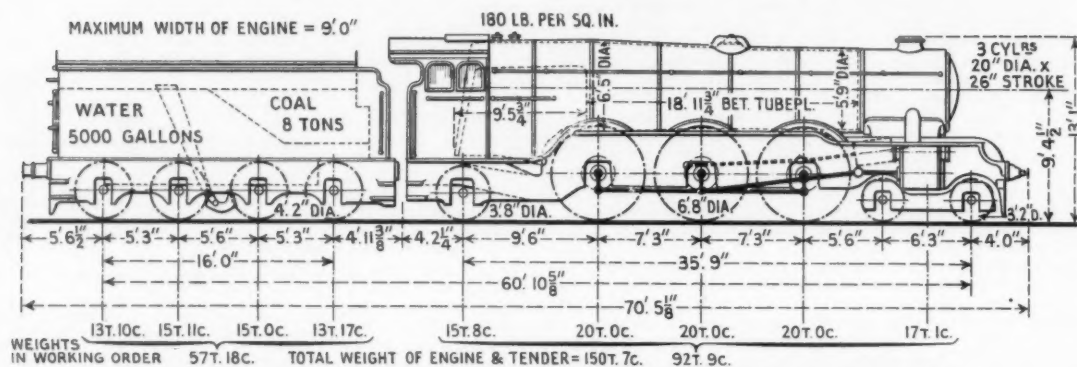
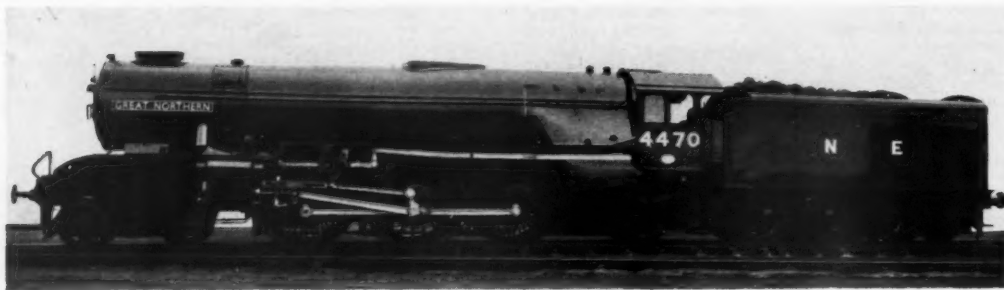


Diagram giving dimensions and axle loadings of No. 1470 "Great Northern"



No. 4470 "Great Northern" as rebuilt by L.N.E.R. in 1945

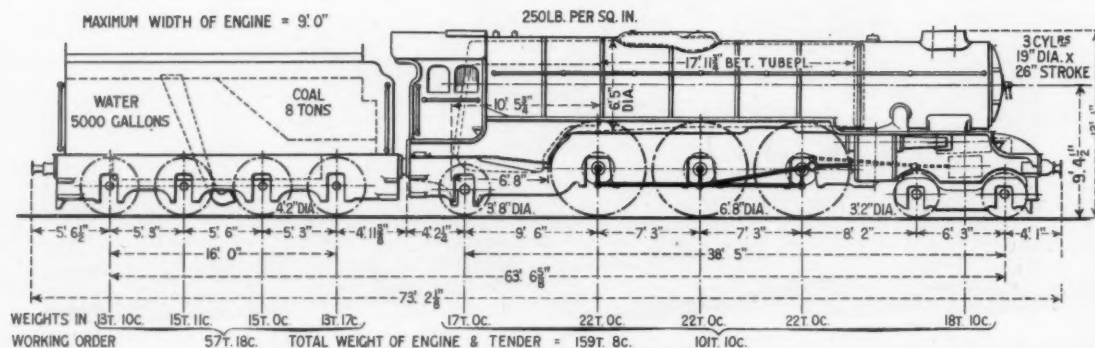


Diagram giving dimensions and axle loadings of No. 4470 "Great Northern" rebuilt by L.N.E.R.

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## RAILWAY NEWS SECTION

## PERSONAL

Lord Leathers, who was Minister of War Transport in the last Government, has joined the board of the Guardian Assurance Co. Ltd.

The Mersey Docks & Harbour Board has appointed Mr. Mark R. Preston, an Assistant General Manager, to be Deputy General Manager & Secretary. Mr. F. H. Cave, Chief Traffic Manager, has been appointed Assistant General Manager, and will act jointly with Mr. Charles Ree in that capacity.

## COLONIAL RAILWAY APPOINTMENT

The Secretary of State for the Colonies has approved the following appointment:—

Mr. W. D. Shreeve, District Traffic Superintendent, Nigerian Railway, to be Senior Traffic Assistant.

The following announcement appears in the Supplement to *The London Gazette*, dated November 20, under the heading of Regular Army Reserve of Officers: Corps of Royal Engineers:—

Major G. R. S. Wilson (8969) is granted the honorary rank of Lt.-Colonel, July 21, 1940, on ceasing to be employed.

Colonel Wilson is an Inspecting Officer of Railways, Ministry of War Transport.

The late Mr. Herbert Mends Gibson, who was General Manager, Manchester Ship Canal Company, from 1934 to 1936, left £33,687.

Mr. W. L. Kelly, Assistant Passenger Manager (Scottish Area), L.N.E.R., who, as recorded in our November 23 issue, has been appointed Assistant Goods Manager (Scottish Area), was educated at King William's College, Isle of Man, and at Peterhouse, Cambridge, where he gained a Classical Exhibition. In 1928 he joined the L.N.E.R. as a traffic apprentice, and in 1931 was transferred to the Passenger Manager's Office (Southern Area) at Liverpool Street. Here, during the organisation of work in connection with the Road Traffic Act, 1930, and the Standing Joint Committees of Associated Companies, he was attached to the Road Transport Section. In this department he was connected also with the Excursion Section, and the Pooling Section formed in 1932 after the pooling agreements with the L.M.S.R. and G.W.R. In June, 1933, Mr. Kelly took charge of the first two "Northern Belle" train cruises, and in 1934 he became Assistant to the District Passenger Manager, Manchester. Three years later he went to the Passenger Manager's Office (North Eastern Area), York, as Head of the Development Section, and in January, 1939, was appointed Assistant District Goods Manager, Hull. At the outbreak of war he held a commission in the R.E. (S.R.), and went to France with the B.E.F. in Movement Control. At the time of the evacuation from France he was Liaison Officer with the French Central Railway Commission, as a Major. From June, 1940, to May, 1942, he was Deputy Assistant Director of Transportation (Movements) in Home Commands, and then until August, 1944, was Assistant Director of Transportation (Movements) at the War Office, in charge of Q (M) 5 Branch. On the liberation of Paris he went overseas with the A.E.F. as British representative (Colonel) on the Dutch-Allied Railway Commission for the rehabilitation of the French rail-

ways. In May, 1945, he was transferred to 21 Army Group in charge of one of the regional railway control teams for the German railways, and in June was appointed



Mr. W. L. Kelly

Appointed Assistant Goods Manager (Scottish Area), L.N.E.R.

Director of Railways, 21 Army Group (Brigadier). He was released from the Army last September. He was appointed District Passenger Manager, Leeds, in March, 1943, but never filled that appointment on account of absence on active service; and he became Assistant Passenger Manager (Scottish Area) in February, 1944.

Mr. C. J. C. Latham, who, as recorded in our October 5 issue, has retired from the position of London Central Divisional Superintendent, Southern Railway, Redhill, entered South Eastern Railway service as a junior clerk in 1896, but some time after-



Mr. C. J. C. Latham

London Central Divisional Superintendent, Southern Railway, 1930-45

wards left England for service on the Canadian Northern Railway. He returned in 1904, and joined the Superintendent of the Line's Department, South Eastern & Chatham Railway, at London Bridge, and in 1911 was appointed Chief Clerk to the London District Superintendent. In 1915 he became Assistant to the Northern District Superintendent, and he was Acting District Superintendent of that division from October, 1917, until June, 1919. He was then engaged in an advisory capacity at Richborough, in connection with post-war work dealt with at that port. Later he became Eastern District Superintendent at Ashford, and in 1923 Southern Divisional Operating Superintendent (Brighton), Southern Railway. Mr. Latham was appointed London Central Divisional Superintendent in 1930.

We regret to record the death on December 11, at the age of 82, of Lt.-Colonel Herman Bonham-Carter, late R.E., who was Secretary of the Madras & Southern Mahratta Railway Co. Ltd. from 1909 to 1925, and then a Director until the working of the system was taken over by the Government of India in 1944; he was Deputy-Chairman from 1930 to 1940. Colonel Bonham-Carter had been Agent & General Manager of the Madras Railway from 1901 to 1908.

## TRIBUTE TO MR. J. G. SINGER

A tribute to Mr. J. G. Singer, who recently retired from the position of Traffic Superintendent, Aberdeen, L.N.E.R., was paid at a complimentary dinner in Aberdeen on November 23. Mr. Hector McNeill, Lord Provost of Glasgow, Regional Port Director for Scotland, spoke in praise of Mr. Singer's work as a member of the Aberdeen Port Emergency Committee set up under the Ministry of War Transport. A portrait and biography of Mr. Singer appeared in our November 23 issue.

Among those recently nominated for Sheriffs in England and Wales are Sir Felix Pole (Deputy-Chairman, Associated Electrical Industries Limited) (Berkshire); Sir William Currie (Director, Southern Railway Company) (Buckinghamshire); Sir Patrick Ashley Cooper (Member, London Passenger Transport Board) (Hertfordshire); Mr. W. K. Whigham (Director, London & North Eastern Railway Company) (Kent); Mr. W. M. Codrington (Director, Great Western Railway Company) (Rutland); Sir Willie Reardon-Smith (Director, Great Western Railway Company) (Glamorgan).

The board of the Avon India Rubber Co. Ltd. announces the appointments of Mr. O. F. Swanborough as Managing Director, and Mr. F. G. Robbins as General Sales Manager.

Mr. J. M. R. Fairbairn who retired in 1939 from the position of Chief Engineer, Canadian Pacific Railway, has been awarded the Sir John Kennedy Medal for 1945 by the Engineering Institute of Canada. The award commemorates the services rendered to the development of Canada, engineering science and the profession by the late Sir John Kennedy, a Past-President of the Institute. During his career Mr. Fairbairn has acted as President, Vice-President, and Member of Council of the Institute.



**Mr. G. Oakes**

District Locomotive Superintendent, Doncaster, G.N.R. and L.N.E.R., 1919-45

Mr. G. Oakes, who, as recorded in our November 30 issue, has retired from the position of District Locomotive Superintendent, Doncaster, L.N.E.R., joined the Great Northern Railway in 1907 as an improver, and was placed at the running sheds at Colwick. Subsequently he held appointments as Assistant District Locomotive Superintendent, Hatfield, from 1909, and District Locomotive Superintendent, Retford, from 1912, before being appointed District Locomotive Superintendent, Doncaster, in July, 1919.

Mr. B. Adkinson, B.Sc. (Eng.), District Locomotive Superintendent, Gorton, L.N.E.R., who, as recorded in our November 30 issue, has been appointed District Locomotive Superintendent, Doncaster, was educated at King's School, Grantham, and later had technical training at Nottingham University. In 1917 he obtained the City & Guilds of London Certificate in Mechanical Engineering, and in 1919 obtained the B.Sc. (Eng.) degree of London University. Mr. Adkinson joined the Great Northern Railway in 1910 as an apprentice. He worked as a journeyman fitter in the running sheds at Colwick, Nottingham, until 1918, when he became leading fitter at Lincoln. In 1919 he was made mechanical chieftain at Ingrow, and in succession filled appointments at Leeds, Ardsley and Hatfield. He then became Locomotive Depot Superintendent, Hitchin, and in 1931 took over a similar position at Hornsey. In 1937 he was appointed Assistant District Locomotive Superintendent, Kings Cross, and in February, 1942, District Locomotive Superintendent, Norwich, leaving there in September, 1943, to become District Locomotive Superintendent, Gorton.

Mr. John Hay Eaton, who, as recorded in our December 14 issue, has been appointed Accountant & Assistant General Manager for Egypt and the Sudan, Iraq and East Africa, Thos. Cook & Son Ltd., was educated at Hillhead High School, Glasgow, and qualified as a Chartered Accountant in 1928. In 1929 he went to South America, where for eight years he was with Price, Waterhouse & Company in Brazil. He returned to England in 1937, and became Secretary of Channel Islands Airways. He left the Channel Islands at the time



**Mr. J. H. Eaton**

Appointed Accountant & Assistant General Manager, Egypt, East Africa & Iraq, Thos. Cook & Son Ltd.

of the German occupation in 1940; during the war he was connected with the Great Western Railway, and was engaged on special duties for the Chief Accountant. Mr. Eaton will leave for Cairo early in the New Year.

In our issue of August 31 we recorded the appointment of Sir Arthur Griffin, Chief Commissioner of Railways, India, to officiate for Sir Edward Benthall as Member (of the Viceroy's Executive Council) for War Transport, while the latter was on leave. In the October issue of the *North Western Railway Magazine* there appears a brief editorial, which refers to Sir Arthur Griffin as "the only man in the whole history of Indian railways ever to serve on the Viceroy's Executive Council." In the further course of the article it is stated: "It is only natural, therefore, that every North Western man should enjoy a sense of pride mingled with the highest respect for a man, who, by the brilliance of his administration, has risen to a position of honour that is second to none in the history of transportation in this great country." Sir Arthur Griffin began his career as an Assistant Engineer on the N.W.R., and rose to be General Manager, before being selected as Chief Commissioner of Railways. Sir Arthur Griffin resumed charge of the duties of Chief Commissioner on October 9.

Mr. C. J. H. Selfe, Trains Assistant to Superintendent & Locomotive Running Superintendent (Scottish Area), L.N.E.R., who recently has been filling temporarily the post of Principal Assistant to the Assistant General Manager (Operating), Central Traffic Office, Marylebone, as recorded in our November 9 issue, has been appointed District Traffic Superintendent, Aberdeen. Mr. Selfe entered railway service in 1920, and obtained experience in the Commercial Department under the District Goods Manager, Newcastle, and as relief clerk, until 1929, when he was appointed as traffic apprentice. From March until October, 1933, he was in the Superintendent's Office, Liverpool Street, under Mr. V. M. Barrington-Ward, for "pooling," and then was appointed Commercial Assistant to the Docks Superin-



**Mr. C. J. H. Selfe**

Appointed District Traffic Superintendent, Aberdeen, L.N.E.R.

tendent, St. Andrew's Dock, Hull. In 1935, he succeeded the Operating Assistant at St. Andrew's Dock. In 1937 he became Dock Agent, Albert & Wm. Wright Docks, Hull, and in 1938 transferred to the District Superintendent's Office, Hull, in connection with the preparation of the A.R.P. scheme for the Hull Docks area. In 1939 he was appointed Goods Agent, Waverley Station, Edinburgh, and his subsequent appointments have been Assistant District Superintendent, Burntisland (May, 1940); Assistant District Superintendent, Edinburgh (December, 1941); Trains Assistant to Superintendent & Locomotive Running Superintendent (Scottish Area) (June, 1942); and Principal Assistant (Operating), Central Traffic Office, Marylebone (July, 1945).

The composition of the National Standing Joint Committee on Road Transport Education, which was set up earlier in the year by the Conference representative of the road transport industry (to which reference was made in our September 7 issue), when it approved the new scheme of road-transport examinations which are to be conducted by the Royal Society of Arts, is as follows:—

Mr. R. Stuart Pilcher (Municipal Passenger Transport Association), Chairman; and Dr. J. G. Docherty (Association of Principals of Technical Institutions), Dr. H. Schofield (Association of Technical Institutions), Mr. C. F. King (Institute of Transport), Alderman W. Bradley (Municipal Passenger Transport Association), Mr. R. Barr, Major H. E. Crawford, Major R. A. B. Smith (National Road Transport Federation), Messrs. R. W. Birch, S. R. Geary (Public Transport Association), A. R. Burnett-Hurst, L. A. Terry (Royal Society of Arts), Thomas Gray (Scottish Road Passenger Transport Association), J. W. Ramsbottom (Educational Adviser to Institute of Transport), and F. W. Crews (Honorary Secretary).

Mr. E. McCully Hunter, Executive Assistant in the Estates Department, London Passenger Transport Board, recently returned from South East Asia Command, and, on release from military service, has resumed his duties with the Board, specialising in rating, income tax and town planning. He joined the Territorial Army in the ranks in 1934 and was



gazetted 2nd Lieutenant, Royal Engineers, in 1936. Shortly after the outbreak of war he transferred to the Transportation Branch, and proceeded to France in 1940. After returning through Cherbourg, he was promoted Major in 1940 and commanded 165 Railway Survey Company for 2½ years before being appointed in 1942 a Deputy to the Railway Construction Engineers at South Eastern and Northern Commands. In 1944 he was appointed a Deputy Assistant Director of Transportation on the H.Q. staff of the Allied Land Forces, South East Asia Command, where, subsequently, he was promoted Lt.-Colonel and an Assistant Director of Transportation attached to the 14th Army during its successful drive through Burma to Rangoon.

Mr. Walter S. Thompson, Director of Public Relations, Canadian National Railways and Trans-Canada Air Lines, has arrived in London on a short visit.

Mr. W. S. Edwards, M.I.Mech.E., M.I.Loco.E., has been made a Vice-President of the Institution of Locomotive Engineers. He has been a Member of Council of the Institution for 25 years. Mr. Edwards is Managing Director of W. G. Bagnall Limited, and of Cowlishaw Walker Engineering Co. Ltd. He is President of the Engineering Employers Association, North Staffordshire.

#### L.N.E.R. STAFF CHANGES

Mr. A. G. Tindill, Deputy Head of the Central Traffic Office, Marylebone, has been appointed on a temporary basis as Principal Assistant (Operating), Central Traffic Office, in succession to Mr. C. J. H. Selfe.

Mr. P. A. Burt, Traffic Control Officer, Central Traffic Office, has been appointed on a temporary basis as Deputy Head of the Central Traffic Office, in succession to Mr. Tindill.

Mr. T. Gaynor, Revenue Accountant (Merchandise), is retiring on January 24, 1946.

Mr. R. W. McEwen, Locomotive Accountant, North Eastern Area, will succeed Mr. Gaynor as Revenue Accountant (Merchandise).

Mr. J. E. Lockey, Assistant Locomotive Accountant, North Eastern Area, is succeeding Mr. McEwen as Locomotive Accountant, North Eastern Area.

Mr. R. Peters, District Engineer, Edinburgh, is retiring on January 26, 1946.

Mr. J. Scott, Assistant District Engineer, Newcastle, has been appointed District Engineer, Edinburgh, in place of Mr. Peters.

Mr. G. Crabtree, Chief Freight Trains Clerk & Chief Controller, Superintendent's Offices, Edinburgh, who has been filling temporarily the post of Trains Assistant to the Superintendent & Locomotive Running Superintendent, Scottish Area, has been confirmed in the latter position on a permanent basis.

Mr. T. S. Roberts, who has been acting as District Superintendent, Sunderland, has been appointed District Goods & Dock Manager, West Hartlepool, in succession to Mr. J. D. Horgan.

Mr. L. W. H. Moore has been appointed Resident Manager of the Royal Station Hotel, York.

Mr. E. R. Williams, Chief Cartage Clerk, Bishopsgate, to be Goods Agent, Chelmsford, vice Mr. T. C. King, retired.

Mr. L. H. Pitcher, City Manager's Office, Hamilton House, to be Agent, Covent Garden, vice Mr. F. J. Ince, retired.

We regret to record the death on December 16, at the age of 66, of Sir Alfred Robinson, K.B.E., C.B., Deputy Secretary, Ministry of Transport, 1934-40, and Regional Transport Commissioner for the South-West since 1941.

Mr. T. C. Lockwood has been released from his duties as Controller of Transport, Canada, and has been appointed by Cunard White Star Limited as General Manager in Canada for its Canadian services.

#### Some Notes on the "Merchant Navy" Class Locomotives, Southern Railway—1

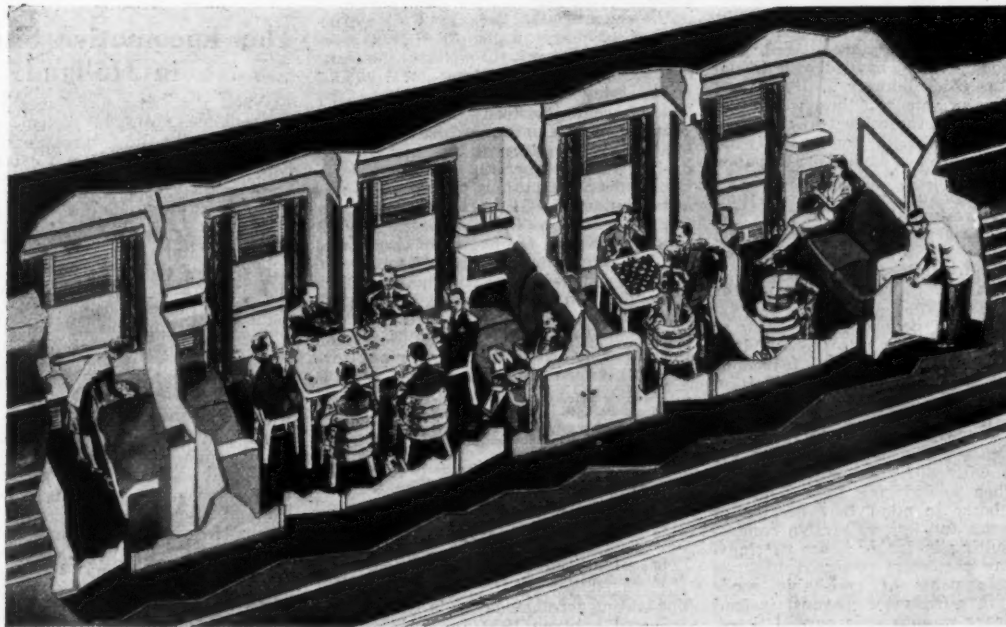
(Continued from page 640)

instead of copper would greatly reduce weight—at least 1½ tons in the present case.

The boilers of the first ten locomotives were built by the North British Locomotive Co. Ltd.; the author is indebted to Mr. Lorimer and Mr. Black for help in their design and manufacture. Subsequent boilers have been produced at Eastleigh. The boiler and firebox are illustrated in Fig. 1. All the plates of the outer firebox, comprising back plates, wrapper, throat plate, and tube plate, are also welded together, the top flanges of both syphons being welded to the firebox roof. The inner and outer fireboxes are welded together at the firehole.

For practical reasons the inner firebox has to be inserted through the foundation ring opening, and the shape of the inner firebox has to be checked to ensure that this is possible. All holes in the pressed plates are drilled before assembly. Wrappers are drilled on the flat before bending, as are barrel plates before rolling—an advance in technique which has quickened production considerably. The foundation ring, double-riveted throughout, is welded from four pieces.

#### Casino Coach for American Railways



Longitudinal section of part of a casino coach designed by Pullman-Standard Manufacturing Company. Planned on the extensible principle, the rooms are convertible from single to double by means of folding partitions. A children's playroom is included which is a feature of American post-war railway coach design.

## French Wartime Refrigerator Traffic

At the outbreak of war in 1939, there were three concerns in France owning refrigerator wagons for the carriage of perishable goods. The three companies also owned extensive warehouses with cold storage facilities. One of these concerns was the Société Française des Transports et Entrepôts Frigorifiques (S.T.E.F.), established in 1920, as a subsidiary company, by the Paris-Lyons-Mediterranean Railway, in association with the Chemin de fer du Nord, the Chemin de fer de l'Est and the Chemins de fer d'Alsace et de Lorraine. Before this, the Chemin de fer d'Orléans had established the Compagnie de Transports Frigorifiques (C.T.F.), also as a subsidiary undertaking. The third concern was founded in 1927 by the French State Railways as a subsidiary for the refrigerator traffic. It was known as the Société d'Exploitation de Wagons Frigorifiques (S.E.F.). The most important cold storage depots operated by these companies were at Paris (Ivry and Bercy), Avignon, Strasbourg and Toulon. By agreement between the three concerns in 1932, competition was brought to an end by limiting the activities of each to areas. Moreover, the C.T.F. and S.E.F. formed a working pool, early in 1934, operating jointly on the two systems (as they then existed) of the State Railways, the P.L.M. and the P.O.-Southern system.

When the Société Nationale des Chemins de fer Français (S.N.C.F.) was formed in 1937, it was thought convenient to concentrate the refrigerator traffic, too, in one undertaking, but the S.N.C.F. was not able to acquire the majority holding (98 per cent. of the share capital) of the S.T.E.F. until 1939. At that time, the fleet of the S.T.E.F. consisted of more than 600 refrigerator wagons. Despite this development the S.T.E.F. continued to operate with a certain measure of independence, since it was thought that the flexibility thus resulting in the long-established contact between the company and their customers would prove advantageous for the further development of the refrigerator traffic in France. With this in view, the S.N.C.F. handed over to the S.T.E.F., as from January 1, 1940, their own refrigerator vans and those which had been bought from the other two concerns. As from that date the control of the refrigerator traffic was wholly in the hands of the S.T.E.F. An agreement, approved by the Minister of Public Works, precluded any working by the C.T.F. and S.E.F. of refrigerator transport services. At that time the S.T.E.F. owned more than 3,000 refrigerator wagons, and orders had been placed for a considerable number of others.

The difficulties occasioned by the war proved a great handicap to the activities of the S.T.E.F. in 1939 and 1940, but after a period of adaptation, the position improved. Thus, perishable goods conveyed in refrigerator wagons in France totalled 558,199 metric tons in 1941, and increased to 660,478 metric tons in 1942, compared with 597,573 metric tons in 1938. When considering these figures it must be borne in mind that because of slower speeds and less favourable connections (resulting in longer hours of transport) many customers preferred to have their consignments of perishable goods conveyed in refrigerator wagons, instead of in ordinary wagons as in normal times. Milk ranked first in refrigerator traffic in 1942, with 174,528 metric tons, vegetables totalled 125,510 metric tons, fresh fish 66,038 metric tons, fresh meat 68,814

metric tons, frozen meat 58,975 metric tons, frozen fish 13,111 metric tons. The conveyance of frozen meat also increased, but the movement of fresh meat nearly ceased because special regulations provided that it could be conveyed in full-wagon loads only, and subject to special permits. An order, issued towards the end of the occupation, limiting the conveyance of livestock, was, however, designed to stimulate the conveyance of frozen meat.

In addition to the factors tending to development of refrigerator traffic, namely, longer hours of transport, conveyance for the Germans, and restriction of livestock traffic, there was also a joint order by the Secretary of State for Agriculture & Food Supply, and the Secretary of State for Transport, which made the conveyance by refrigerator compulsory for certain classes of perishable goods, mainly to combat the problems of long periods on rail. The additional cost which producers, and in the last resort, the public, had to bear in connection with refrigerator transport did not prove a handicap in the circumstances during the war. Finally, however, refrigerator traffic showed considerable decrease because of the large number of wagons sent to Germany, in addition to those destroyed or damaged during the last stage of the war. A certain number of cold storage depots, too, were wrecked or damaged.

## New Passenger Coaches in Sweden

At the end of 1943, the Swedish State Railways owned 3,487 standard-gauge vehicles for the carriage of passengers, mail and luggage. The passenger coaches provided seating accommodation for 8,300 second class and 141,700 third class travellers. In addition, there were some 4,300 sleeping berths, of which 1,900 were in the second class. Because of the expansion of passenger traffic there was overcrowding in trains throughout the war, despite additions to coaching stock. Third class seating accommodation increased by 89 per cent. between 1939 and 1944, contrasting with an increase of 265 per cent. in third class passenger-kilometres covered during the same period. The increase in the number of third class passengers was approximately 185 per cent. Additions to the passenger rolling stock of the Swedish State Railways (exclusive of mail and luggage vans) totalled only 137 four-wheel and 120 eight-wheel coaches between 1919 and 1929. In the latter year, the Swedish State Railways embarked on an extensive programme of renewal and additions, and the following new vehicles were put into service between 1930 and 1944:—

- 317 four-wheeled third class carriages.
- 57 eight-wheel composite second and third class carriages
- 18 eight-wheel second class carriages
- 12 third class sleeping cars
- 23 composite second and third class sleeping cars
- 3 composite first and second class sleeping cars
- 18 restaurant cars
- 5 composite restaurant and coffee cars
- 51 buffet cars
- 7 composite third class carriages with luggage compartments
- 18 eight-wheel luggage vans
- 131 four wheel luggage vans

The seating accommodation in the carriages delivered between 1930 and 1944 totalled 1,812 second class and 34,991 third class. The sleeping cars had 282 second class and 813 third class berths. The seating accommodation in the restaurant, coffee, and

buffet cars is not included in the above figures.

Although it is expected that passenger traffic will decrease in the coming months (on the resumption and gradual extension of normal road motor traffic), the Swedish State Railways intend to replace a large number of over-age four-wheel carriages. Orders were placed early in the year (as well as in 1944), and deliveries by the end of 1945 are expected to total 51 third class carriages, 4 second class carriages, 6 second/third class sleeping cars, 3 restaurant cars, and 25 four-wheel luggage vans. The price for an eight-wheel third class carriage is about kr. 160,000 (£9,500 at the current rate of exchange—kr. 16:90 to the £) at the present time. The first all-steel carriages were placed in service in 1931, and since then no wooden carriages have been built for the Swedish State Railways. The heavy-type all-steel carriage has been replaced by a medium-weight steel vehicle and in recent years preference has been given to construction in light metals.

Passenger carriages in hand comprise a number of express passenger third class coaches, series C 08, which include two special compartments for mothers travelling with children under two years of age. The fitting of these compartments has been evolved in consultation with the Swedish Mothers' Association. There are hot water boilers and washing appliances, as well as resting places for the children.

Coffee cars and buffet cars are meeting with special favour. In addition to being used on lines where the service of restaurant cars would prove uneconomical, some are also included in fast trains, complementary to restaurant cars. The buffet cars and coffee cars under construction belong to the RC 01 and C 08c series.

The modernisation programme of the Swedish State Railways envisages also the large-scale adoption of streamline high-speed light-weight railcars. For the time being, six units, with a speed of 81 miles an hour, are to be built.

## The Locomotive Situation in Holland

When the German collapse came, the Netherlands Railways system was effectively divided into three sections. The western part, consisting of North and South Holland, Utrecht and Gelderland, was separated from the remainder by the destroyed bridges at Moerdijk, Zaltbommel, Nijmegen, Arnhem, Westervoort, Zutphen, Deventer and Hattemerbroek. Another part covered the south, and the third portion comprised the east and north of the country. Fighting had been worst in the southern portion and most of the layout had been severely damaged by the retreating Germans. Nijmegen, previously heavily bombed, s'-Hertogenbosch and Rosendaal Stations were completely destroyed, but Eindhoven, Sittard, Maastricht, Heerlen, Venlo, and Roermond were little affected. The locomotive depot at s'-Hertogenbosch has disappeared. That at Venlo was badly damaged, and at Maastricht, Heerlen and elsewhere the Germans blew up locomotives in the sheds and so did much damage to the buildings. Fortunately the depots at Nijmegen, s'-Hertogenbosch, Eindhoven, Rosendaal, Goes, Maastricht and Heerlen are now working again.

A depot has been established at Tilburg, where the principal workshops are functioning again, in spite of the damage suffered, and the rolling stock works at Blerick are in order. The southern area



of the system was the part most quickly liberated by the Allies: in the other portions the Germans began removing rolling stock, even using many electric and diesel vehicles as emergency dwellings. The Germans did their maintenance and overhaul work at Zwolle, where the Netherlands Authorities have resumed operation, as also at Leeuwarden and Onnen. In the west the Germans had themselves endeavoured to keep things in operation to the last to facilitate their own withdrawal, but the Allies attacked the routes, especially the Hague-Gouda line, over which the V weapon supplies were brought, so that in places much damage was done and even now single-line working is all that is possible. The Germans took away all the equipment from the shops at Haarlem, Utrecht, and Amersfoort and the permanent way depot at Craillou.

Many locomotives were damaged during the fighting in south Holland, and the Germans, in retreating, rendered most of the rest unserviceable. In the other areas the enemy removed many locomotives, but some—damaged for the most part—have been recovered. The rail connection between the western and southern areas was restored on July 1, at which date the position was that 204 locomotives were fit for service, 198 were in a damaged condition, and 464 had disappeared. In the southern area the lightly damaged engines have now been put in order, but others, except those awaiting minor repairs at Tilburg depot, are seriously damaged.

At Roosendaal, Tilburg, Eindhoven, and Nijmegen—and latterly also in the western area—considerable numbers of English Army locomotives are operating, and at Maastricht American engines are in service. These were built specially, ready for the work, in 1943 and 1944. The Netherlands staff find the English 10- and 8-coupled engines much to their liking and are said to prefer them to the American 8-coupled design. There is also a number of saddle tank, and other tank-type, shunting engines, diesel, and diesel-electric locomotives. At various times numbers of German, Belgian and French locomotives were operating on the Netherlands lines, and when the southern area was liberated many German engines were either receiving attention at Tilburg workshops or were left behind on the lines as the enemy retreated. In the western and eastern areas also the Germans used many of their own engines and a considerable number were left behind. The majority are of former Prussian stock or design, the remainder of Reichsbahn pattern. The Dutch Authorities have allocated their own numbers to the engines. The passenger types comprise a 4-6-0 and a 2-6-0 (tank) design. The former was a very popular Prussian engine; no fewer than 3,370 examples were built, and the tank engine also was well known. The remaining German engines, nine types in all, are all goods locomotives, four of them of the tank variety. Three of the tender engines are of the Prussian G8 class or two derived designs, either 8-coupled or 8-coupled with leading pony truck, and there are some Reichsbahn standard 2-8-2 goods tanks. A few of the engines came from Belgium or France, having been delivered to these countries under the 1918 Armistice, or peace-treaty terms. They will in due course be returned again to their country of origin. The Germans made considerable use of the 8-coupled G8 goods engine in the 1914 war and nearly 5,000 of them were built for the Prussian State system. The passenger tank engines were on the Berlin City and suburban services until electrification of the system.

## Development and Use of Subsidiary Signals

At a meeting of the Institution of Railway Signal Engineers in London on December 7, Mr. F. B. Egginton, Member, read a paper entitled "Subsidiary Signals; Their Development and Some Problems Arising from Their Use." In the absence of the President, Major R. Falshaw Morkill, from illness, Mr. H. H. Dyer, a Vice-President, occupied the chair.

Mr. B. Wagenrieder, opening the discussion, criticised some present arrangements, and said that the most dangerous situation of all was when a driver was entering an occupied platform. On many days' running a driver might find the platform clear, then a time would come when it was not, and he would say he was not prepared for it. It was essential to indicate clearly when the occupied condition obtained, but the best way of doing so was open to discussion.

Mr. A. F. Bound, Past President, said that subsidiary signals should be divided into two classes; those applying to a movement into occupied and those controlling one entering clear territory. The warning signal was, however, in a class by itself. Alterations in a layout over a week-end sometimes resulted in the characteristics of a signal being changed, but the driver could see no reason for it. He had made proposals under which this would not happen and the "off" aspect would be selected by track circuit control, yellow or green according to circumstances.

Lt-Colonel E. Woodhouse felt some concern at the paradoxes revealed by Mr. Egginton. The question was, what did the driver want to know? The driver was not concerned with signalling theories, but required, he thought, to know whether he had a clear section ahead of him or not, and how to indicate that clearly was what they had to discuss.

Mr. J. H. Fraser spoke about the practice on the former North Eastern Railway of permitting both calling-on and running signals to be "off" at the same time. This had some advantages. If the calling-on arm had to be cleared by reason of the section being occupied, and the conditions afterwards changed, the upper arm could be pulled off without first showing a danger indication. It was certainly unsatisfactory for drivers often to get a calling-on arm and then find the line unoccupied.

Mr. C. G. Derbyshire asked whether it was not possible to find something common to the various aspects and arrive at one subsidiary signal suitable for all purposes? What real difference of meaning did the "C," "S," or "W" sign have for a driver? Conditions might in any case change after he had received one of these special indications, which might lessen his confidence in them. Why could not a subsidiary signal have one distinct cautionary meaning, easy to understand?

Mr. A. Moss considered their troubles had arisen from endeavouring to provide a particular signal for a particular movement. They had now arrived at four kinds and even in applying them they had to break away at times from the principles considered to govern them. As to conditions changing after a driver had received an indication, that could and did occur with running signals.

Mr. H. E. Morgan, Past President, said he thought that the "C," "S," and "W" lettering was a valuable addition to a subsidiary arm. If a driver received the "W" (warning) sign, he knew the section was unoccupied up to the home signal ahead, but occupied in advance of it at that

moment. That was a great advantage. In a case where a subsidiary had to apply for going through a section under Regulation 5 or shunting forward to set back into a siding, how could they get on without the "W" and "S" lettering?

Mr. P. A. Langley spoke in favour of the position-light subsidiary. They could, he thought, do without lettering in colour-light areas. For "warning" signal purposes a delayed yellow could be used. If they could do without the lettering in one case, why could they not do so in semaphore areas?

Mr. E. G. Brendnall referred to the difficulties that arose in applying the "C," "S" or "W" lettering and thought that if one subsidiary could be agreed on it would be an advantage, say some special signal for use wherever caution and low speed were required. The position-light signal had proved satisfactory and avoided all confusion with running signals.

Mr. F. Horler said that the rules provided that if a driver was stopped at a section signal in advance of the box, he was to assume, when it was cleared, that he was proceeding under the warning regulation.

Mr. A. A. Pecksen said that the clearing of a calling-on arm should indicate that the line was occupied somewhere in rear of the next signal. With permissive block it meant there was a train in the section; the line might become clear later, but the driver had to observe great caution throughout. At terminal stations with colour-light signalling he had found that a satisfactory method was the use of green for clear to the buffers; yellow for an obstruction at the far end; and a shunt signal for platform nearly full.

Mr. R. Gheury de Bray, as a non-railwayman, thought the two main functions to be fulfilled by a subsidiary were to show plainly whether an obstruction was to be expected or not, or, to put it another way, to say to the driver that he was to go cautiously ahead as far as he could, or that he might go far enough to set back when necessary. The advance of science might give them some application of radar or cab signalling which would tell the driver just how far ahead the line was clear and so remove some of their present difficulties.

The Chairman observed that there were two schools of thought in the matter. One said, give a driver one type only of subsidiary signal, under which he was to move slowly and be prepared to stop short at any point. The other said that they should tell him as much, within reason, as they could, regarding the conditions in advance; but these did not remain always as they were when the driver got his signal. It was questionable whether there was any advantage in telling him something definitely when a change might be impending.

Speaking of ground signals, Mr. Dyer had referred to the position-light type and the expense of the disc pattern. He thought that the two white lights at night, with so many other white lights about, were insufficient as a stop indication. He felt strongly that there should be a red light in the "on" indication. The real objection to colours being used in ground signals applied to green, which might prove dangerous when seen from a distance at night; but to red alongside the white he saw no objection.

After Mr. F. B. Egginton had replied to the discussion the Chairman moved a vote of thanks to him and announced that the next meeting would be held on January 4, as a "question and answer" meeting.



## Staff and Labour Matters

### Dock Workers' Wages

The negotiations in respect of the dispute on dockers' wages having reached a deadlock, the Minister of Labour & National Service announced in the House of Commons on November 28 the appointment of a committee of investigation to report on the dispute. The Minister's statement in the House was made in reply to a private-notice question by Mr. Eden, and was as follows:—

"At the outset of the negotiations, the problems of decasualisation were much in the minds of both parties, but there was a wide difference of view as to the basis on which the present discussions should proceed. I am happy to say that these differences were dealt with in the negotiations, and a basis reached which, subject to acceptance by a national delegate conference of the unions concerned, will narrow the problem to the single question of the national minimum wage and the minimum guarantee to piece workers. A new basis of calculation for the piece worker has been discussed and tentatively agreed, and arrangements have been reached for dealing with the important problems affecting the future of the industry. This measure of agreement which, as I have already stated, is subject to ratification by a national dock delegate conference, is contained in a document, an abstract from which, with the permission of the House, I will circulate in the Official Report.

"As announced yesterday, the unions found the employers' offer on the national minimum wage to be unacceptable. This offer, I am empowered by the employers to say, was for an increase from 16s. to 18s. a day. After careful consideration of all the circumstances and of the great issues involved, I have decided to appoint a committee of investigation under the Conciliation Act to consider, in the light of the circumstances and on the basis of the document which I am circulating, the outstanding difference in regard to the national minimum wage and the piece workers' minimum guarantee, and to make recommendations. With the issue so narrowed, there is reason to hope that a report should be available at a very early date."

The following is the abstract referred to:—

#### Employers' Reply to Trade Union Claim

"We remain unconvinced of the justification for a wage advance under existing conditions. But to show that we are sincerely anxious to maintain the joint machinery and promote good relations, we are prepared on our side to make an offer. But we must attach conditions to it. These are as follows:—

"On the first feature of our proposals relating to the scheme of decasualisation, we are anxious to bring this matter to a satisfactory conclusion at the earliest possible moment. We propose that the council should proceed to discuss it and in the event of a breakdown in negotiations we should jointly ask the Minister for an independent inquiry in the terms of his assurance of November 12, 1945 (annexe). Both sides should undertake to make every effort to expedite the preparation of permanent schemes of decasualisation.

"A joint committee of the National Joint Council shall be established forthwith with the following terms of reference:—

To examine the industrial arrangements of the industry on the basis that there will be permanent schemes of decasualisation, and to report.

"The committee to be provided with an independent chairman appointed by the Minister of Labour & National Service after consultation with the two sides. Where the independent chairman so agrees, on the instance of either side, the National Joint Council shall report a difference to the Minister of Labour & National Service.

"Subject to the acceptance of the foregoing, our offer is as follows:—

(a) to increase the national minimum wage of time workers and the minimum guarantee to piece workers from 16s. to on the half daily basis;

(b) permanent men whose rates of pay are

directly governed by agreements of the National Joint Council, to have their wages increased by a week;

(c) piece workers to receive 5 per cent. increase on existing piece-work rates (i) in lieu of each 1s. a day flat rate increase being received under existing national agreements and (ii) for each 1s. a day increase granted under (a) above, with proportionate increases for fractions of 1s. granted.

"Provided (a) that this offer is not to be regarded as stabilising existing piece-work rates or as precluding a local revision of such rates, and also (b) that it is without prejudice to any question of a national review of piece-work principles."

As amended November 27, 1945

#### Annexe

Statement made by the Minister of Labour & National Service on November 12, 1945  
*Docks Decasualisation Scheme*

"If no agreed scheme is in operation by the prescribed date, then, without prejudice to the Minister's power to prepare a scheme himself which would be subject to inquiry if objection were lodged, the two sides of the industry can be assured that if a joint submission is made: (a) setting out the extent of agreement between the two sides for the provisions of a scheme; and (b) defining the issues on which the two sides have different views, the Minister will before preparing a scheme of his own, cause an independent inquiry to be held on the basis of the joint submission."

Mr. Justice Evershed was appointed Chairman of the committee and the members were: Principal Sir Frederick Rees, Professor I. W. MacDonald, Mr. F. N. Hepworth, and Mr. J. C. Little. Its terms of reference are:—

To consider in the light of the circumstances and on the basis of the proposals shown in the schedule hereto the outstanding difference in regard to the national minimum wage and the piece-workers' minimum guarantee in the port transport industry and to make recommendations, including a recommendation as to the date from which any increase should operate.

The schedule includes the employers' reply to the trade union claim and the Minister's assurance with reference to the preparation of a decasualisation scheme.

Mr. Justice Evershed was Chairman of the commission which recently reported on the wages arrangements and methods of organisation of work in the cotton-spinning industry. He was appointed Regional Controller of the Ministry of Fuel & Power for the Nottinghamshire, Derbyshire & Leicestershire Region in 1942, and was made a Judge of the Chancery Division last year. He is a member of the Industrial & Export Council. Sir Frederick Rees is Principal of University College, South Wales; Mr. MacDonald is Professor of Accountancy in Glasgow University; Mr. Hepworth was until recently Chairman of the Metal Box Co. Ltd., and Mr. Little was formerly President of the Amalgamated Engineering Union.

A delegate conference of dock workers, representing men in all the ports of Great Britain and Northern Ireland, was held in London on November 30 and adopted the following resolution:—

"The conference, having heard the report of the workers' side of the negotiating committee, endorses their action in refusing to effect a settlement with the employers on the basis of the offer of 18s. a day. In regard to the piece workers' formula, we recommend this to our members for acceptance.

"The question of the basic rate and the date of application, together with the question of the minimum to piece workers, having been referred to a committee of investigation, we are not in a position to take any further steps on that matter until the report of the inquiry is to hand, after which we recommend that the delegate conference should be recalled at the earliest possible moment to hear the result."

A second resolution declared the deter-

mination of the delegates to adhere to the constitutional machinery of the industry and to ignore any subversive agitation at present on foot or which might arise "during the next few days." It called on the dock workers to remain at work, to maintain their solidarity and their loyalty to their union. The resolution assured the members that the unions' case would be fully presented to the committee of investigation.

The committee of investigation commenced its inquiry on December 4.

## Questions in Parliament

### Fares between Leeds and Wetherby

Colonel L. Ropner (Barkston Ash—C.) on December 3 asked the Minister of War Transport if he would state the present rail fares between Wetherby and Leeds; to what extent those fares had been increased during the war; and, in view of the fact that passengers could be carried between the same two places by road for a much lower sum, when it was intended to review the present scale of the rail fares.

Mr. Alfred Barnes in a written answer stated: The third class fares are single, 2s. 4d., monthly return 3s. 5d. Season ticket rates range from 7s. 6d. for a weekly ticket to £14 9s. 6d. for a twelve-monthly ticket. The wartime increases are 16½ per cent. single and monthly return, 10 per cent. seasons. It would not be practicable to base the rail fares on road fares between two places, nor is the time at present opportune for a general review of railway fares and charges.

### Rail and Shipping Companies Civil Aviation Talks

Group-Captain G. R. Ward (Worcester—C.) on November 28 asked the Parliamentary Secretary to the Ministry of Civil Aviation whether his Ministry had yet begun talks with the railways and shipping lines interested in civil aviation; and whether he had any statement to make on progress.

Mr. Ivor Thomas (Parliamentary Secretary, Ministry of Civil Aviation): Conversations have been in active progress. I am not in a position to make a statement at present, but the Minister of Civil Aviation will do so as soon as possible.

Group-Captain Ward: Is the Parliamentary Secretary aware that the country is anxiously awaiting the outcome of these important talks, and will he take every step possible to ensure that there is no delay?

Mr. Thomas: We are taking every step we can, but it does not rest in our hands alone.

Mr. W. Gallacher (West Fife—Communist): In any conversations with regard to civil aviation, will the Minister see that something is done to augment the service between London and Glasgow?

There was no reply.

### Transport between Aberdeen and South of England

Mr. Hector Hughes (Aberdeen North—Lab.) on December 3 asked the Minister of War Transport what steps he proposed to take to expedite and rationalise commercial transport between Aberdeen and the south of England.

Mr. Alfred Barnes: I am not aware of any special difficulties in connection with commercial transport between Aberdeen and the south of England, but if Mr. Hughes will let me have further particulars of what he has in mind I will consider them.

Mr. Hughes: Does the Minister realise

that Aberdeen's geographical position makes first-rate transport by road, rail and sea essential for carrying its merchandise to the thickly-populated districts in the south of this island?

Mr. Barnes: I am afraid I cannot move the geographical position of Aberdeen, but if there are any matters of organisation in connection with transport difficulties, I will look into the matter.

Mr. Hughes: Will the Minister realise that I am not asking him to deal with the geographical situation at Aberdeen, but with the transport from that city to thickly-populated areas in the South of England?

Mr. Barnes: If Mr. Hughes will submit to me the problem he has in mind, I will endeavour to deal with it.

Sir Ronald Ross (Londonderry—C.): Is not the financial aspect very appropriate? There was no reply.

#### Emergency Control of Road Transport

Squadron-Leader M. C. Hollis (Devizes—C.) on November 30 asked the Minister of War Transport at what date the wartime emergency control of road transport would terminate.

Mr. Alfred Barnes stated in a written answer: The Emergency Road Transport Organisation based on fuel rationing cannot be discontinued so long as rationing is necessary. As regards the Road Haulage Organisation, I would refer to the answer I gave on November 12 to a question by Lt.-Colonel A. V. G. Dower (Penrith & Cockermouth—C.).

#### Loaded Running of Haulage Vehicles

Lieutenant William Shepherd (Chester, Bucklow—C.) on December 3 asked the Minister of War Transport if he would state the number of empty miles run by road-haulage vehicles operating under the control of his Ministry during the past 12 months.

Mr. Alfred Barnes: This figure is not

available. Lieutenant Shepherd may, however, be interested to know that a sample analysis in 1944 showed a percentage of loaded running of 81. While loaded mileage figures obviously vary from time to time according to the incidence of traffic, I have no evidence to suggest that this figure has altered materially since then.

Lieutenant Shepherd: Is the Minister aware that both operators and drivers are fed up with the waste which the present bureaucratic system involves?

Mr. Barnes: No, I am not aware of that. I am rather impressed by the fact that it has only just been discovered since Mr. Herbert Morrison made his statement.

#### White Paper on Civil Aviation

Sir Wavell Wakefield (Marylebone—C.) on November 28 asked the Parliamentary Secretary to the Ministry of Civil Aviation if he would now state when the White Paper on the Government's proposals for the future organisation of civil aviation would be issued.

Mr. Ivor Thomas: The Minister must first conclude the conversations to which he referred in his statement on civil aviation policy on November 1. The White Paper will then be issued without delay.

Sir W. Wakefield: Can the Parliamentary Secretary say why there is all this delay, since the White Paper should have been issued some time ago? Is there any difficulty or hold-up?

Mr. Thomas: It would have been very easy to have issued a White Paper which would merely have been an expansion of the statement of policy, but the Minister has said that he wishes to include in it the results of his conversations with the surface transport interests. As soon as that is done, he will publish the White Paper without delay.

#### Freight Services

Colonel F. J. Erroll (Altrincham—C.) on November 28 asked the Parliamentary Secretary to the Ministry of Civil Aviation

whether the Government intended to develop regular air freight services independently of passenger and passenger-cum-freight services.

Mr. Ivor Thomas: It is the Government's intention that the air-transport corporations shall provide adequate transport for all air-traffic needs including special freight services where justified.

Colonel Erroll: Does that reply exclude the possibility of privately-operated freight services?

Mr. Thomas: It does not exclude the possibility, but all regular scheduled services will be run by the public corporations.

Sir W. Wakefield: Does that mean that any company that wished to run a regular aircraft from Manchester to Lille or some other service of that kind, would be precluded from doing so?

Mr. Thomas: If it were a regular scheduled service, that would be so.

#### London-Glasgow Air Service

Mr. T. Scollan (West Renfrew—Lab.) on November 28 asked the Parliamentary Secretary to the Ministry of Civil Aviation what steps he was taking to augment the air service between London and Glasgow which, at present, only carried five passengers a day.

Mr. Ivor Thomas stated in a written answer: The seating capacity now available on this service is not always fully occupied. I shall be glad to discuss this question with Members who wish to travel regularly by the service.

WILLIAM ASQUITH LIMITED.—Trading profit for the year ended August 16, 1945, amounted to £28,358 against £21,123 for the previous year. With the balance brought forward, £27,490, there is a total balance of profits amounting to £55,848. After redemption of funding certificates (£43,394), £1,058 to general reserve, and a 5 per cent. ordinary dividend, £3,792 is carried forward.

## Accidents on the Railways

In the House of Commons on November 26, Mr. J. A. Sparks (Acton—Lab.) asked the Minister of War Transport if he would state the number of accidents, fatal and otherwise, to members of the public while travelling on the railways in Great Britain; what percentage that bore to the total travelling public; and the

total of passenger train-miles run, for the years 1938 to 1944 and for the first 10 months of 1945.

Mr. Alfred Barnes (Minister of War Transport) stated in reply: "As the answer contains a number of figures, I am circulating the information together with additional particulars, where available, of the passenger-miles per casualty, which give a truer comparison than passenger journeys per casualty. It will be seen that

in 1944 in train accidents one passenger was killed in 150 million carried and one seriously injured in 54 million."

The information which the Minister subsequently circulated in the Official Report, however, was incomplete. The table which we publish below provides the complete information; we understand that this is the form in which the table will appear in the bound volume of *Parliamentary Debates*.

### STATEMENT SHOWING NUMBER OF ACCIDENTS, FATAL AND OTHERWISE, TO MEMBERS OF THE PUBLIC WHILE TRAVELLING ON RAILWAYS IN GREAT BRITAIN, TOGETHER WITH NUMBER OF PASSENGER JOURNEYS AND PASSENGER-MILES (MILLIONS) PER CASUALTY, AND NUMBER OF PASSENGER TRAIN-MILES RUN FOR THE YEARS 1938 TO 1944, AND FOR THE FIRST 10 MONTHS OF 1945

(Note.—Only serious injuries were reported by the companies after September 1, 1939; the figures for injuries, therefore, before and after that date are not comparable)

Year	Train accidents		Movement accidents*		Passenger journeys originating, including season ticket holders	Passenger journeys (millions) per casualty (train and movement accidents)		Passenger train-miles	Estimated passenger-miles	Passenger-miles (millions) per casualty	
	Killed	Injured	Killed	Injured		Killed	Injured			Killed	Injured
1938	11	533	58	4,990	1,729	25	0.3	319	21,192	307	4
1939	9	795	78	3,328	1,575	18	0.4	287	Not available		
1940	40	46	100	209	1,332	10	5	227			
1941	50	62	104	209	1,369	9	5	227			
1942	27	38	113	253	1,652	12	6	229	34,767	233	133
1943	4	6	145	255	1,824	12	7	230			
1944	12	33	119	215	1,854	14	7	227	34,592	264	139
January 1 to October 31, 1945 (provisional figures)	46†	116†	48	97	1,631	2	8	202	Not available		

\* Movement accidents are caused by, or connected with, the movement of railway vehicles, exclusive of train accidents

† Includes Bourne End derailment, September 30, 1945

## Notes and News

**Canadian Pacific Railway.**—The board has declared a final dividend of 2 per cent. on the preference stock of the company in respect of the year 1945, payable on February 1 to stockholders on the register on December 31, 1945.

**Senior Assistant Engineer Required.**—A senior assistant engineer is required by the Nigerian Railway for two tours of 24 to 48 months on probation for permanent and pensionable employment. See Official Notices on page 655.

**G.W.R. Christmas Traffic.**—Some 120 men of the Royal Artillery, Woolwich, are assisting the station staff at Paddington in the handling of Christmas parcels and parcels post traffic. They reported for duty on December 10 and will work in shifts until Christmas Eve. Other military help is being given at Addison Road, Southall, Reading, Didcot, Oxford, and High Wycombe.

**L.M.S.R. Application for Provisional Order.**—The L.M.S.R. has applied for a Provisional Order under the Private Legislation Procedure (Scotland) Act, 1936, for the purpose of constructing a railway in the Parish of Stevenston; confirmation of road diversion in the Borough of Greenock; the acquisition of lands; and the re-enactment of powers of the company relating to lands. For details, see Official Notices, page 655.

**Crompton Parkinson Limited.**—The accounts for the year ended September 30, 1945, show a profit of £434,283 (compared with £432,099 for the previous year). The directors recommend a final dividend on the ordinary and "A" ordinary stock of 7½ per cent., again making 15 per cent. for the year plus a special cash bonus of 7½ per cent. (same) on the two classes of ordinary stock. The "carry-forward" is £690,039 against £588,256 last year.

**The Sheffield Railway Centenary.**—Sir Ronald W. Matthews, Chairman of the L.N.E.R., is to preside at a luncheon at the Royal Victoria Station Hotel, Sheffield, today (December 21) which is being held in commemoration of the opening of the

Sheffield, Ashton-under-Lyne & Manchester Railway 100 years ago. We refer to this centenary in an editorial article on page 635, and a chronological map of the Manchester-Sheffield line is published on this page.

**Dean & Dawson Limited Liverpool Office.**—The former office in Liverpool of Dean & Dawson Limited was closed after partial destruction by bombing. Premises at 26, North John Street, Liverpool, have now been opened for business; Mr. H. S. Ecob, the pre-war Manager, is in charge.

**East Kent Road Car Co. Ltd.**—The operating revenue of this company for the year ended September 30, 1945, amounted to £992,883, against £779,808 last year, and the net profit on the year's working came out at £34,455, against £36,304 for the previous year. £313,035 was set aside for taxation compared with £174,500 in the corresponding period. A dividend of 8 per cent. (less tax) has been declared on the ordinary stock and a balance of £27,440 carried forward to the next year's account.

**L.M.S.R. Application for Bill.**—The L.M.S.R. has applied for permission to introduce in the present session of Parliament a Bill for powers to extend a footbridge over the railway north of Nottingham Road and place a new footbridge over the River Erewash; stop up a footpath and the construction of a new footpath at Loughton; the acquisition of lands; the abstraction of water from the River Soar; the re-enactment of the company's powers in relation to lands of the company; and provision as to entry and compensation. For details, see Official Notices, page 655.

**Argentine North Eastern Railway.**—At the annual general meeting of the Argentine North Eastern Railway Co. Ltd. in London on December 11, the chairman, Mr. B. H. Binder, F.C.A., said that the gross receipts of \$15,568,809 showed an increase of \$2,489,752, but most of this had been absorbed by a rise of \$2,302,667 in working expenses. The increase in tariffs authorised in 1944 had been of no benefit whatever to the railway, it having been given solely for the purpose of helping to meet the increases in wages. The reduction in road

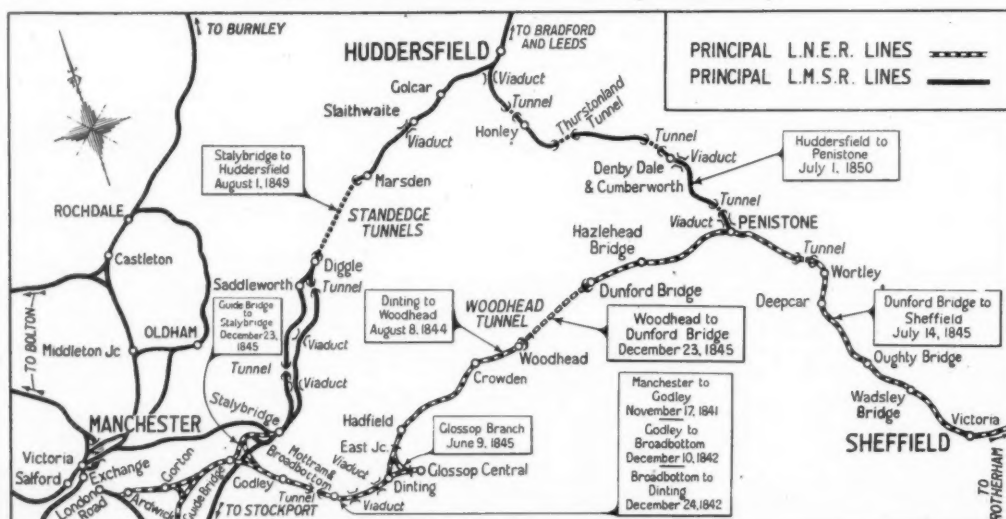
competition due to shortage of petrol, tyres, and spare parts could not be expected to continue indefinitely, and the company also no doubt would have to face competition from air transport, increasing facilities for which were already being provided in its zone. The international bridge spanning the River Uruguay between Argentina and Brazil had now been opened, and the company hoped to benefit from the interchange rail traffic between the two countries.

**New South Wales Government Railways.**—The Commissioner for New South Wales Railways in his report for the year ended June 30, 1945, states that members of the staff submitted 1,614 suggestions for the improvement of the service, 367, representing 22.7 per cent., of which were adopted. The suggestions covered a wide range of railway operation from the provision of additional traffic accommodation to the provision of a calculator for insurance charges. There was also a number of mechanical inventions among the suggestions adopted.

**Lincolnshire Road Car Co. Ltd.**—For the year ended September 30 last the net operating revenue of this company amounted to £254,278, an increase of £12,759 over last year's working. From this total £173,500 is set aside for deferred repairs and taxation, £45,647 for tax on fuel and vehicle licences, and £1,700 for directors' fees, the net profit for the year amounted to £33,430, against £20,433 for the previous year. At the ordinary general meeting held on December 7 a dividend of 10 per cent. (less tax) on the ordinary capital of the company was declared, and £16,221 was carried forward to the next year's accounts.

**Tees-side Industrial Development.**—An announcement by Dorman Long & Co. Ltd. of the acquisition of a 650-acre site at the mouth of the River Tees for the erection of a universal beam mill, was mentioned on page 577 of our November 30 issue; Imperial Chemical Industries Limited now states that it has purchased a 3,500-acre estate at Wilton, three miles from Middlesbrough, in the Tees-side

## The Manchester-Sheffield Railway Centenary



Chronological map showing the development of the railway between Manchester and Sheffield, now a main line of the L.N.E.R. The opening to public traffic of the Woodhead Tunnel section on December 23, 1845, marked the completion of the work, and is being celebrated today by a luncheon at Sheffield, at which Sir Ronald Matthews is to preside. See news paragraph above, and editorial article "Through the Backbone of England" on page 635



## PARLIAMENTARY AND OFFICIAL NOTICES

*None of the vacancies on this page relates to a man between the ages of 18 and 50 inclusive unless he is exempted from the provisions of the Control of Employment Order, 1945, or the vacancy is for employment excepted from the provisions of that Order.*

**LONDON MIDLAND & SCOTTISH RAILWAY.**  
Notice is hereby given that application has been made to Parliament in the present Session by the London Midland & Scottish Railway Company (hereinafter referred to as "the Company") for leave to bring in a Bill for purposes of which the following is a concise summary:—

1. Extension of footbridge over the railway of the Company north of Nottingham Road and a new footbridge over the River Erewash east of the existing footbridge over the said river in the urban district of Long Eaton in the county of Derby.

2. Stopping up footpath and construction of new footpath in the Parish of Loughton in the rural district of Newport Pagnell in the county of Buckingham.

3. Acquisition by compulsion or agreement of lands in the parish of Loughton in the rural district of Newport Pagnell in the county of Buckingham; in the borough of Workington in the county of Cumberland; in the parish of Sandiacre in the rural district of Sharrow and in the urban district of Long Eaton in the county of Derby; in the parish of Stoke Orchard in the rural district of Cheltenham in the county of Gloucester; and in the urban district of Beeston and Stapleford in the county of Nottingham.

4. Diversion of footpath partly in the urban district of Long Eaton in the county of Derby and partly in the urban district of Beeston and Stapleford in the county of Nottingham.

5. Abstraction of water from the River Soar in the parish of Stanford-upon-Avon in the rural district of Basford in the county of Nottingham.

6. Special provisions as to entry and compensation.

7. To re-enact with or without amendment powers of the Company relating to holding selling disposal and building on or over lands of the Company.

8. Incorporation application amendment or repeal of Acts.

And notice is hereby also given that plans and sections relating to the intended works and plans showing the lands which may be taken or used compulsorily under the powers of the intended Act and a book of reference to such plans were on or before the 20th day of November, 1945, deposited for public inspection with the Clerk of the county council of the county of Derby at St. Mary's Gate, Derby; with the Clerk of the county council of the county of Buckingham at the County Hall, Aylesbury; with the Clerk of the county council of the county of Cumberland at the County Offices, Carlisle; with the Clerk of the county council of the county of Gloucester at the Shire Hall, Gloucester; and with the Clerk of the county council of the county of Nottingham at the County House, Nottingham; and that a copy of so much of the said plans sections and book of reference as relates to each of the several areas hereinafter mentioned in or through which the intended works are proposed to be made or in which lands which may be taken or used

compulsorily are situate was on or before the same day deposited for public inspection as follows:—

As relates to any non-county borough with the Town Clerk of such borough at his office;

As relates to any urban district (not being a borough) or any rural district with the Clerk of the District Council at his office;

As relates to any parish having a Parish Council with the Clerk of the Parish Council at his office (if he has no office) at his residence.

On and after the 4th day of December, 1945, a copy of the Bill may be inspected and copies thereof obtained at a price not exceeding two shillings for each copy at the Station Masters' offices at the following railway stations of the Company:—Bletchley, Cheltenham, Derby, Nottingham and Workington; and also at the offices of the undersigned.

Dated this 30th day of November, 1945.

R. P. HUMPHRYS,

Euston Station,

London, N.W.1.

Chief Solicitor.

BEALE & CO.,

22, Great Smith Street,

Westminster, S.W.1.

Parliamentary Agents.

**SCOTTISH OFFICE, NOVEMBER, 1945.  
PRIVATE LEGISLATION PROCEDURE  
(SCOTLAND) ACT, 1936.**

**LONDON MIDLAND & SCOTTISH RAILWAY.**

Notice is hereby given that application has been made in the month of November, 1945, to the Secretary of State by the London Midland & Scottish Railway Company (hereinafter referred to as "the Company") for a Provisional Order (hereinafter referred to as "the Order") under the Private Legislation Procedure (Scotland) Act, 1936, for purposes of which the following is a concise summary:—

1. Construction of railway (3 furlongs 4 chains in length) in the Parish of Stevenston within the area of the District Council of the Ninth District in the County of Ayr.

2. Confirmation of road diversion already carried out in the Old or West Parish of Greenock in the Burgh of Greenock in the County of Renfrew.

3. Acquisition by compulsion or agreement of lands in the Parish of Stevenston within the area of the District Council of the Ninth District in the County of Ayr; in the Old or West Parish of Greenock in the Burgh of Greenock in the County of Renfrew; and in the Parishes of Cadder and Old Monkland within the area of the District Council of the Ninth District in the County of Lanark.

4. To re-enact with or without amendment powers of the Company relating to holding selling or disposal and building on or over lands of the Company.

5. Incorporation application amendment or repeal of Acts and Orders.

And notice is hereby further given that on or before the 20th day of November, 1945, plans and a section relating to the intended works and plans showing the lands which may be taken or used compulsorily under the powers of the Order with a book of reference to such

plans were deposited for public inspection in the offices at Ayr and Kilmarnock of the Sheriff Clerk of the County of Ayr; in the offices at Paisley and Greenock of the Sheriff Clerk of the County of Renfrew; and in the offices at Glasgow and Airdrie of the Sheriff Clerk of the County of Lanark; and that a copy of so much of the said plans section and book of reference as relates to each of the several areas hereinafter mentioned in or through which the intended works are proposed to be made or in which lands which may be taken or used compulsorily are situate was on or before the same day deposited for public inspection as follows:—

As relates to the Burgh of Greenock with the Town Clerk of such Burgh at his office;

As relates to any District with the Clerk to the District Council of such District at his office.

On and after the 4th day of December, 1945, a copy of the Order may be inspected and copies thereof obtained at a price of two shillings per copy at the Station-Master's office at the following railway stations of the Company, viz.:—Stevenston, Greenock Central and Gartcosh; and also at the offices of the undersigned Solicitors and Parliamentary Agents.

The procedure subsequent to the deposit of the Order in the office of the Secretary of State will be by way of Provisional Order unless it is otherwise decided in terms of the Private Legislation Procedure (Scotland) Act, 1936, in which case the procedure may be by way of Private Bill and this Notice and all deposits made in respect of the application will subject to the Standing Orders of Parliament apply to such Bill.

Dated this 28th day of November, 1945.

MATTHEW WALLACE,

302, Buchanan Street,

Glasgow, C.2.

Solicitor (Scotland).

R. P. HUMPHRYS,

Euston Station,

London, N.W.1.

Chief Solicitor.

BEALE & CO.,

22, Great Smith Street,

Westminster, S.W.1.

Parliamentary Agents.

**SENIOR ASSISTANT ENGINEER** is required for **NIGERIA GOVERNMENT RAILWAYS** for two tours of 24 to 48 months' service on probation for permanent and pensionable employment. **SALARY SCALE:** £880 by £40 to £920, with possibility of further advancement. Initial salary according to qualifications and experience. Free passages and quarters. Leave on full salary. Candidates must be M.I.C.E. or equivalent qualification, and had considerable experience in Way and Works Department of a railway either in the United Kingdom or in the Dominions.

Write, quoting E.2176A, to Ministry of Labour and National Service, Appointments Department, Technical and Scientific Register, Room 670, York House, Kingsway, London, W.C.2, for application form, which must be returned completed by December, 28 1945.

E.30.11.A.4.

development area which will be used for large-scale production of heavy organic chemicals from coal and oil. The estimated capital expenditure involved in connection with the scheme is £10,000,000. Road and rail access are available and on the north side there will be rail connections to the L.N.E.R. and to the deep-water docks. The scheme has been discussed in detail with the local authorities concerned, the railway company, the Tees Conservancy Board and every interest whose active co-operation and assistance will be essential.

**The Taital Railway Co. Ltd.**—The working of this railway for the year ended June 30, 1945, resulted in a loss of £18,549. The reduction of £35,700 in gross receipts amounted to 45.35 per cent. compared with the previous year due principally to a falling off in nitrate traffic, on the transport of which the railway is dependent. The production of nitrate in the Taital Department has been practically suspended. A member of the board is in Chile handling negotiations with the Government on the subject of the resumption of manufacture of nitrate in the Department, but so far the directors are unable to make any further statement on the situation.

**Road Accidents in October, 1945.**—The return issued by the Ministry of War Transport of the number of persons reported to have died, or to have been injured, as a result of road accidents in Great Britain during the month of October last

shows 534 deaths (compared with 487 in October, 1944), 3,249 seriously injured (compared with 2,694 in October, 1944), and 10,214 slightly injured (compared with 7,773 in October, 1944). More persons were killed or injured on the roads during October than in any previous month this year. Fatal accidents to child pedestrians amounted to 117, the highest total for October ever recorded.

**East Yorkshire Motor Services Limited.**—Mr. J. S. Wills, Chairman of the company, at the annual meeting held on December 11, in the course of his speech, said that neither a general mandate nor a theoretical bias towards public ownership was enough to justify any nationalisation proposal. The real tests, to be applied to each proposal separately, were, first, whether it would make any real difference and, if so, whether the difference would be for better or for worse. The British Isles enjoyed the finest road passenger transport services in the world. Municipal and company undertakings operated their services in co-operation with each other, and co-ordination long since had been established between road and rail. All these working arrangements had been made voluntarily in the interests of the public and under a system which ensured local consideration of local needs. It was actually proposed to divert untold man hours to pulling to pieces what had been built up over a period of half a century and putting the pieces together again in

another form, and all to secure something which was already provided.

**Temiscouata Railway Bondholders' Committee Limited.**—The gross earnings of this railway for the four weeks ended November 5, 1945, were \$30,294, compared with \$26,780 in 1944. The operating expenses totalled \$27,440 in the same period as compared with \$24,755 last year.

**Naming of Southern Railway "Merchant Navy" Class Locomotives.**—The naming ceremony of Southern Railway "Merchant Navy" class locomotive No. 21C18 *British India Line* took place at Waterloo Station on December 13. It was performed by Mr. A. O. Lang, Deputy Chairman & Managing Director of the British India Steam Navigation Co. Ltd.

**Paraguay Central Railway.**—The report of the Paraguay Central Railway for the year ended June 30, 1945, shows that a gross increase of £37,270 has been nearly all absorbed by greater expenditure, so that the net available at £72,028 was only £365 better than in the previous year. There is a surplus of £18,528 after meeting prior lien and "A" debenture interest which would almost have paid a year's interest on the "B" debentures requiring £19,500; but the directors point out that in accordance with the terms of the trust deed this surplus can only be used to reduce the debit balance, which now stands at £181,857. The balance sheet shows that the reserves have increased during the year

by £14,110 to £370,792, while there were investments, tax certificates and cash totalling to £233,975, or £39,470 more than a year previously. Earnings to date of the present year continue to expand, but probably expenditure is correspondingly higher.

**Administrative Staff College.**—The Court of Governors of the Administrative Staff College, to which reference was made on pages 553 and 576 of our November 30 issue, has accepted an offer by Lord Hambleden of the loan of "Greenlands," his riverside home at Henley-on-Thames, for use as a college building. In a press interview recently, Lord Latham, Leader of the London County Council, and one of the Governors of the college, said that it was in a country-house atmosphere that students could mix most freely and readily. An offer of £10,000 for the award of scholarships has been made by the Nuffield Foundation.

**United Railways of the Havana & Regla Warehouses.**—From the results for the year to June 30, 1945, the net revenue debit is increased from £14,062,204 to £15,091,632, after charging a full year's Debenture interest, plus accrued interest on unpaid interest. The report says that the new scheme of arrangement passed last September is awaiting the sanction of the Court. Increased tariffs authorised last month to meet increased wages will avoid a further depreciation of net revenue, but representations continue to be made for compensation for several previous wage increases.

**The Leopoldina Railway Co. Ltd.**—Notice is given to the holders of the 4 per cent. debenture stock and of the 6½ per cent. (formerly 5 per cent.) terminable debentures of the Leopoldina Railway Co. Ltd. and to the holders of the 5 per cent. first debentures to bearer of the Leopoldina Terminal Co. Ltd., that, pursuant to the scheme of arrangement dated December 22, 1941, the committee referred to in the scheme, after consultation with the board of directors of the Leopoldina Railway Co. Ltd., has consented to an extension of the moratorium for a further period of one year until January 1, 1947. Notice is also given that the Terminal Debentures Committee of the Leopoldina Terminal Co. Ltd. has consented to an extension of the moratorium agreed to by the holders of the 5 per cent. first debentures of the Terminal company passed on February 17, 1942, for a further period of one year until January 1, 1947.

**L.M.S.R., L.N.E.R. and G.W.R. Christmas Travel Arrangements.**—The L.M.S.R., L.N.E.R. and G.W.R. are making every effort to provide the maximum train services for travellers this Christmas, but in view of the expected increase in travel, all restaurant cars on the L.M.S.R. and L.N.E.R. will be withdrawn from December 21 to 30, so as to make available as many additional trains and seats as possible. Normal weekday services will be strengthened within the limits of present resources and this will also apply on Monday, December 24, and Wednesday, December 26, although on these days any workmen's or business trains not required will be withdrawn. On Sunday, December 23, and on Christmas Day, the ordinary Sunday services will be run. The following G.W.K. Irish boat services will be cancelled: Fishguard to Waterford on Monday, December 24; Waterford to Fishguard on Tuesday, December 25; Cork to Fishguard, on Monday night, December 24, and on

Wednesday, December 26; Fishguard to Cork on Tuesday night, December 25, and on Thursday, December 27.

**The Costa Rica Railway Co. Ltd.**—Income of the Costa Rica Railway Co. Ltd. for the year ended June 30, 1945, amounted to £54,911 compared with £69,048 last year. After payment of interest on the first mortgage debentures there is a balance of net revenue of £1,530 6s. 10d. available for the second debentures. A payment of 2½ per cent. in respect of the arrears of interest on that issue was made to the holders on September 30, 1944, but the total sum now available does not permit of a payment this year. The debit balance of the net revenue account remains at £161,311.

**G.W.R. Restoration of Restaurant Car Services.**—On December 31 restaurant services will operate on the Great Western Railway. To begin with cars will be provided on the following trains:—

10.30 a.m. Paddington—Penzance.  
9.30 a.m. Penzance—Paddington.  
5.55 p.m. Paddington—Cardiff.  
10.15 a.m. Cardiff—Paddington.  
6.10 p.m. Paddington—Wolverhampton.  
11.39 a.m. Wolverhampton—Paddington.

The cars to be used on the "Cornish Riviera Limited" will be of new design with 12 first and 32 third class seats; they will be equipped with a new system of lighting and ventilation, etched plate glass draught screens and tub-type swivel chairs. The interior furnishings have been executed by Hampton & Sons, Ltd., Pall Mall East, S.W.1.

**L.M.S.R. Branch Railways in Scotland.**—In a statement on the railway branch lines in the Highland district, the L.M.S.R. mention that there has recently been public interest in a number of branch railway lines, particularly those in the Perthshire and Highland districts, and fears have been expressed that some are to be closed. The general policy of the L.M.S.R. as regards its services can be simply stated. Changes in the nature or flow of traffic affecting trains or stations or sections of line are under constant observation, and, within the limited means at present available, adjustments are made as necessary. The recent public discussion has centred on various branch railway lines, such as Crieff-Balquhider, Aberfeldy, Ballachulish, Dornoch, Fortrose, Killin, and Thurso. Naturally, for post-war transport purposes, the L.M.S.R. has been examining, in conjunction with other transport services, all its facilities, with the object of giving the best possible services to the community. So far the examination of only one branch line in the Highland area has been completed, and there is no intention of closing this line for either passenger or goods traffic; on the contrary, the possibility of improving the services in future is being examined. No decision will be taken to withdraw any of these facilities without consultation with all concerned.

## Contracts and Tenders

The London offices of Burton, Griffiths & Co. Ltd. and B.S.A. Tools Limited are being moved to new premises. All inquiries and correspondence should be addressed to Claridge House, 32, Davies Street, W.1 (telephone: Mayfair 4155-9).

Below is a list of orders placed recently by the Egyptian State Railways:—

James Mills Limited: Split taper pins.  
Davis & Timmins Limited: B.M.S. screws.  
Hoffmann Manufacturing Co. Ltd.: Ball bearings.

Turret Grinding Wheel Co. Ltd.: Grinding wheel.  
General Electric Co. Ltd.: Electrical material.  
J. Stone & Co. Ltd.: Electrical material.  
Carborundum Co. Ltd.: Glass paper.  
P. & W. Maclellan Limited: Mild-steel channels, galvanised sheets.  
Davies & Metcalfe Limited: Vacuum tube.  
Hubbard Patents Limited: Copper joints.  
Armstrong Oil Co. Ltd.: Pads for Armstrong oilers.  
John Spencer & Sons (1928) Ltd.: Axle steel.  
Standard Telephones & Cables Limited: Telephone and telegraph material.  
Boulton & Paul Limited: Wire netting.  
British Thomson-Houston Co. Ltd.: Spares for power house.  
Sentinel (Shrewsbury) Limited: Telegraph rollers.  
Ferguson & Timpson Limited: Spares for power house.  
Marryat & Scott Limited: Spares for power house.  
Dewrance & Co. Ltd.: Spares for power house.  
Gwynne's Pumps Limited: Spares for power house.  
James Hendry Limited: Spares for power house.  
J. W. Roberts Limited: Spares for power house.  
Ransomes & Rapier Limited: Spares for power house.  
Imperial Chemical Industries Limited: Paints.  
Vacuum Brake Co. Ltd.: S.R. car spares.  
Richard Klinger Limited: S.R. car spares.  
Metropolitan-Cannell Carriage & Wagon Co. Ltd.: Head stock lines.  
Charles Richards & Sons Ltd.: Locomotive material.  
Elliott Brothers (London) Ltd.: Telephone and telegraph materials.  
British Insulated Callenders Cables Limited: Cable flex cord and copper strand.  
Quasi-Arc Co. Ltd.: Flexible shaft.  
Whitelegg & Rogers Limited: Lubricators, grease and parts.  
Eyre Smelting Co. Ltd.: Zinc rods.  
Alton Battery Co. Ltd.: Cells.  
Siemens Brothers & Co. Ltd.: Element depolarizer.  
Westinghouse Brake & Signal Co. Ltd.: Rectifier and spare units.  
Siemens Electric Lamps & Supplies Limited: Cut-out bases, carriers, etc.  
Midland Electric Manufacturing Co. Ltd.: Kantock cut-out bases.  
Falk Stadelmann & Co. Ltd.: Cut-out bases, etc.  
Taylor Bros. & Co. Ltd.: Tyres.  
Gresham & Craven Limited: G. & C. injectors.  
C. C. Wakefield & Co. Ltd.: Valves.  
Consolidated Brake & Engineering Co. Ltd.: Cylinder valve gauge.

## Forthcoming Meetings

January 1 (Tue.).—The Institution of Civil Engineers, Gt. George Street, Westminster, S.W.1. 5.30 p.m. "Folkestone Warren Landslips: Researches Carried Out in 1939 by Southern Railway Company," by Mr. A. H. Toms, B.Sc., Assoc. M.Inst.C.E.

January 2 (Wed.).—The Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, Storey's Gate, St. James's Park, S.W.1. 6 p.m. "A Modern Locomotive History. Ten Years' Development on the L.M.S.—1923 to 1932," by Mr. E. S. Cox, Member of Council.

January 4 (Fri.).—The Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2. 6 p.m. "Question and Answer." A further selection of signalling questions submitted by members will be discussed and answered.